

October 29, 1999

PERSONAL AND CONFIDENTIAL

Board of Trustees
Kentucky Retirement Systems
Perimeter Park West
1260 Louisville Road
Frankfort, Kentucky 40601

Members of the Board:

The forty-third annual actuarial valuation of the Kentucky Employees Retirement System, the fortieth annual actuarial valuation of the County Employees Retirement System, and the forty-first annual actuarial valuation of the State Police Retirement System have been completed and the reports prepared. The valuations were made on the basis of data provided by the Retirement System as of June 30, 1999.

On the basis of the assumptions as stated in each report and the data furnished us by the Administration of the Retirement Systems, it is certified that the valuations have been made by the use of generally accepted actuarial principles and that, if the recommendations of the reports are followed, adequate provision will be made for the funding of future benefits.

The three Retirement Systems are actuarially sound. Adequate provision is being made for the funding of the Actuarial Accrued Liabilities of the Kentucky Employees Retirement System, the County Employees Retirement System, and the State Police Retirement System as required by the Kentucky Revised Statutes, as appropriate funding rates have been established by the Board for this purpose.

Respectfully Submitted,
WILLIAM M. MERCER, INCORPORATED

A handwritten signature in black ink, appearing to read "Stephen A. Gagel", is written over a horizontal line. To the right of the signature is a vertical line.

By _____
Stephen A. Gagel, F.S.A.

SAG/lst

ANNUAL ACTUARIAL VALUATION

JUNE 30, 1999

KENTUCKY EMPLOYEES RETIREMENT SYSTEM

COUNTY EMPLOYEES RETIREMENT SYSTEM

STATE POLICE RETIREMENT SYSTEM

FRANKFORT, KENTUCKY

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October, 1999

KENTUCKY EMPLOYEES RETIREMENT SYSTEM

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COUNTY EMPLOYEES RETIREMENT SYSTEM

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STATE POLICE RETIREMENT SYSTEM

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FORTY-THIRD ANNUAL ACTUARIAL VALUATION

JUNE 30, 1999

KENTUCKY EMPLOYEES RETIREMENT SYSTEM

FRANKFORT, KENTUCKY

SECTION I

INTRODUCTION

The results of the forty-third annual actuarial valuation of the Kentucky Employees Retirement System are presented in this report. The actuarial valuation was made on the basis of the data provided by the System as of June 30, 1999.

The purpose of the actuarial valuation is to determine the actuarial condition of the Retirement System and the rate of employer contributions for the ensuing fiscal year required to support the System.

The plan provisions utilized in this valuation are described in the Summary of Principal Plan Provisions in Section VI. The basis of funding, as defined in KRS 61.565, provides that the actuarial valuation method is uniform for all benefits provided by the System. The Entry Age Normal Actuarial cost method has been used for all benefits. KRS 61.565 provides that each employer participating in the System shall contribute an amount equal to the Normal Cost contribution rate, and an amount sufficient to amortize the Unfunded Actuarial Accrued Liability over 30 years using the level-percentage-of-payroll method. This is the standard used herein to determine whether the funding of the System is adequate.

The actuarial valuation results are based upon the employee census and asset data supplied by the office of the System, and upon the actuarial assumptions as stated in Section II.

SECTION II

ACTUARIAL CONSIDERATIONS

Description of Actuarial Methods

The actuarial valuation is the means by which the contingent liabilities and contribution rates of a retirement system are evaluated and determined. It provides a guide to the System to the financing required during years of active service to accumulate the funds needed to provide member's benefits. It also makes it possible to estimate beforehand the cost of proposed changes in the System so that action can be taken in the light of the cost consequences.

The methods of valuation are prescribed by KRS 61.565. The Entry Age Normal Cost Method was used to determine costs of all benefits with the exception of the retiree medical insurance benefit. Under this method the employer's contribution to the retirement system consists of Normal Cost, a payment to fund the Unfunded Actuarial Accrued Liability, medical insurance, and administrative expenses. The Normal Cost represents the contribution (as a level percent of payroll) that completely funds benefits at retirement if made from a person's entry into employment until his retirement. The Actuarial Accrued Liability represents the sum of money and investments that would be held in the fund if the retirement system had been in effect since the date each member was first employed. The payment to fund the Unfunded Actuarial Accrued Liability is the amount necessary to amortize this liability over 30 years using the "level-percentage-of-payroll" method. Under the "level-percentage-of-payroll" method, the amortization payment is an amount which remains constant as a percentage of payroll over the 30 years. The initial 30 year period began with the 1990 valuation. In each subsequent valuation, any change in Unfunded Actuarial Accrued Liability is identified and established as a separate amortization base with a 30 year funding period beginning with that valuation. The change in Unfunded Actuarial Accrued Liability established as a separate base in each valuation will include changes attributable to experience gains and/or losses over the prior year, as well as changes attributable to benefit improvements and revisions in actuarial assumptions and funding methods.

The medical insurance contribution rate was originally determined in the 1987 valuation as the level percent of payroll necessary to fund projected medical insurance premiums over the next sixteen years (taking into account the level of reserves in the Insurance Fund). Beginning in 1988, this rate was increased each year by a percentage amount needed to reach the Entry Age Normal funding rate within a 20 year period measured from 1987. This was continued through the 1992 valuation. In the 1992 valuation, an acceleration of the scheduled increases in the medical insurance contribution rate was recommended where possible. This acceleration in these rates was coupled with a deferral of future increases until the time of the next experience study, unless there was a deterioration in the funded position of the medical premium benefit in which case the rate levels were to be reviewed to redetermine an appropriate current funding level, or unless recommended contributions are not made in the prior year, in which case the shortfall would be spread over future years through an increase in the contribution rate. This continued through the 1995 valuation. Effective with the 1996 valuation, a new

medical insurance funding policy was adopted by the Board. Under this revised policy, the medical insurance contribution rate for the 1996 valuation was set equal to the 1995 rate plus any reduction in the retirement and administrative expense rates between the 1995 and 1996 valuations (but in no event to be less than the 1995 medical insurance contribution rate). Beginning with the 1997 valuation, the medical insurance contribution rate is to be increased at the start of each biennium (coincides with valuations in odd numbered years) by the percentage amount necessary to raise this medical insurance rate to the full Entry Age Normal Cost Method contribution rate by the year 2016. There will be no change in the even numbered years unless there are actuarial gains relative to the retirement funding which will then be used to increase the medical insurance funding rate for the next year only.

In computing the full Entry Age Normal Cost Method contribution rate, liabilities are to be developed based on actuarial assumptions in use in the current valuation (as adjusted from time to time due to experience studies) and actuarial value of assets based on the same 5-year market to book value average method as employed for the retirement benefit valuation. The actuarial value of assets for the medical contribution rate valuation utilized book value prior to the 1996 valuation.

The amount of the administrative expense was based on the budgeted amount for the twelve months following the date of the valuation, as allocated between Hazardous position and Non-Hazardous position employees.

Actuarial Assumptions

Since the actuarial valuation involves estimates of benefits payable in the future, it is necessary that assumptions be made as to the interest earnings, rates of mortality, withdrawal, retirement, and disability, and the rate at which salaries will increase. In addition, an assumption must be made relative to increases in medical insurance premium rates in order to value the liability for the medical insurance benefit. It is desirable that the actuarial assumptions be reviewed periodically to see whether past experience and probable future experience justifies the continued use of these actuarial assumptions. Such a study was performed subsequent to the 1995 actuarial valuation and new actuarial assumptions were adopted by the Board for use in the 1996 and subsequent actuarial valuations, until such time as another experience study is performed. This valuation reflects assumptions based on the 1995 experience study. Actuarial assumptions used for hazardous position employees are similar to actuarial assumptions adopted for the State Police Retirement System (with the exception of the rate of retirement). The actuarial assumptions as used in this valuation are described later in this section.

Actuarial Value of Assets

The actuarial value of assets is determined in the following manner for the Retirement Fund:

1. Determine the ratio of the market value of Retirement Fund assets to book value as of the current valuation date and the four preceding valuation dates (but not using any valuation dates prior to June 30, 1989). All asset values include accrued investment income and member and employer contribution receivables, and exclude member refunds and investment expenses payable.
2. Determine the average ratio of market to book value as of these valuation dates.

3. Apply this average ratio to the book value (as adjusted for accrued investment income and member and employer contribution receivables, and member refunds and investment expenses payable) as of the current valuation date to derive valuation assets.

For the Insurance Fund, the revision in the asset valuation method was deferred until the 1996 valuation. Prior to that time, the actuarial value of assets continued to be determined based on the book value of the assets in that fund as of the valuation date adjusted for any receivables and/or payables.

The different asset valuation methods for the Retirement Fund and the Insurance Fund for the 1990 through 1995 valuation were a result of the following:

1. There was separate book and market value information for the Insurance Fund under all systems dating only from July, 1992. So it was not possible to use the same averaging method for the Insurance Fund as used for the Retirement Fund until sufficient years of separate information was developed.
2. The magnitude of assets to liabilities for the Insurance Fund was such that the method of valuing assets would only negligibly affect valuation results. Also, given the method then in use for transitioning into higher medical premium contribution rates over future years, the asset valuation method used for the Insurance Fund was not as critical as the asset valuation method used for the Retirement Fund.

However, effective with the 1996 valuation, there was sufficient historical information to allow use of the same asset valuation method for the Insurance Fund as that used for the Retirement Fund since 1990. Accordingly, the Board adopted this change in asset valuation method for the Insurance Fund effective with the 1996 valuation.

The following tables show derivation of valuation assets for the Retirement Fund and the Insurance Fund as of the current valuation:

RETIREMENT FUND - NON HAZARDOUS			
Valuation Date	Book Value	Market Value	Ratio
June 30, 1999	3,705,009,651	5,841,831,841	157.67386%
June 30, 1998	3,273,913,563	5,052,998,475	154.34123%
June 30, 1997	2,926,182,502	4,204,799,784	143.69575%
June 30, 1996	2,679,637,955	3,514,044,648	131.13878%
June 30, 1995	2,447,885,584	3,025,239,596	123.58583%
Average Ratio			142.08709%
Valuation Assets (Average Ratio x Current Book Value)			5,264,340,397

RETIREMENT FUND - HAZARDOUS			
Valuation Date	Book Value	Market Value	Ratio
June 30, 1999	198,800,430	278,898,663	140.29077%
June 30, 1998	170,721,122	235,073,631	137.69453%
June 30, 1997	139,535,231	187,043,028	134.04717%
June 30, 1996	115,637,173	143,402,634	124.01084%
June 30, 1995	94,802,757	111,369,232	117.47468%
Average Ratio			130.70360%
Valuation Assets (Average Ratio x Current Book Value)			259,839,319

INSURANCE FUND - NON HAZARDOUS			
Valuation Date	Book Value	Market Value	Ratio
July 30, 1999	228,765,502	315,405,720	137.87294%
June 30, 1998	180,958,817	250,398,874	138.37340%
June 30, 1997	153,793,017	192,666,240	125.27633%
June 30, 1996	129,710,411	143,929,381	110.96209%
June 30, 1995	102,238,561	110,001,728	107.59319%
Average Ratio			124.01559%
Valuation Assets (Average Ratio x Current Book Value)			283,704,887

INSURANCE FUND - HAZARDOUS			
Valuation Date	Book Value	Market Value	Ratio
June 30, 1999	61,497,394	82,635,100	134.37171%
June 30, 1998	47,959,309	63,370,222	134.42692%
June 30, 1997	39,630,282	48,559,776	122.53200%
June 30, 1996	32,325,283	35,340,607	109.32807%
June 30, 1995	25,053,690	26,483,148	105.70558%
Average Ratio			121.27286%
Valuation Assets (Average Ratio x Current Book Value)			74,579,649

Note: Book and market values reflect accrued investment income and member and employer contribution receivables, member refunds and investment expenses payable.

A. STATEMENT OF ACTUARIAL ASSUMPTIONS

(1) Mortality:

- (a) Active & retired lives - 1983 Group Annuity Mortality Table, plus a pre-retirement duty death rate of .0005 per year for hazardous duty employees.
- (b) Disabled lives - Social Security Administration Disability Mortality Rates - Actuarial Study No. 75 (current rates used by PBGC for disabled lives receiving Social Security).

(2) Disablement - Graduated rates based on 1995 experience study.

(3) Termination of employment - Graduated select (non-hazardous only) and ultimate rates based on 1995 experience study.

(4) Retirement - Non-Hazardous:

<u>Age</u>	<u>Retirement Rate</u>
55-57	.03
58-59	.04
60-61	.05
62	.25
63-64	.10
65	.50
66-67	.20
68	.25
69	.40
70 & Over	1.00

At age 55-64 in lieu of the age related rate, 20% are assumed to retire as soon as eligible for unreduced benefits.

Hazardous: Assumed that 50% will retire as soon as eligible for unreduced benefits and balance will continue to age 60.

(5) Marital status

- (a) Percentage married - 100%.
- (b) Age difference - Males are assumed to be 3 years older than their spouses.

- (6) Dependent children - For hazardous position employees under duty related death benefits, it is assumed that the employee is survived by 2 dependent children, each age 6.
- (7) Investment return - 8.25% per year, net of investment related expenses, compounded annually.
- (8) Compensation progression - 6.50% per year, compounded annually.
- (9) Underlying Inflation Rate - 3.5% per year; reflected in investment return and compensation progression assumptions.
- (10) Retiree Medical Insurance - It was assumed that future retirees would select medical coverage in the same proportion that current retirees have selected coverage. Monthly premium rates were assumed to be as follows:

<u>Plan Type</u>	<u>Rate in Effect on Valuation Date</u>
Single	\$203.00
Family	450.00
Parent Plus	260.00
Couple	456.00
Medicare	96.90
High Option	176.62

In determining the target Entry Age Funding rate in valuations beginning with 1996, it was assumed that medical premiums would grow at the following annual rates:

<u>Years</u>	<u>Medical Increase</u>
1996 - 2005	10%
2006 - 2010	9%
2011 - 2015	8%
Thereafter	7.5%

The assumed rate of growth in number of retirees receiving medical insurance was based on assumed retirement and mortality patterns used throughout the valuation.

- (11) Missing data - For those active members with incomplete data, the following assumptions were made:

- . If reported salary was zero or blank, then monthly salary was assumed to be \$926
- . If reported age was blank, then assume current age equal to age 18 plus years of service reported

(12) Members with Multiple Service Records

- For active members with service in more than one system, the liability has been valued as follows:
 - . Service under all systems is aggregated for purposes of determining benefit eligibility.
 - . Future service is projected only under the system in which the member is currently active.
 - . The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
 - . The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

B. SAMPLE RATES FOR NON-HAZARDOUS POSITION EMPLOYEES***(1) Annual Rates of Mortality:**

<u>Age</u>	<u>Active Mortality</u>		<u>Disabled Mortality</u>	
	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>
25	0.05%	0.03%	4.83%	2.63%
30	0.06%	0.03%	3.62%	2.37%
40	0.12%	0.07%	2.82%	2.09%
50	0.40%	0.16%	3.83%	2.57%
55	0.61%	0.25%	4.82%	2.95%
60	0.92%	0.42%	6.03%	3.31%

(2) Annual Rates of Decrement:

<u>Age</u>	<u>Disablement</u>	<u>Ultimate Termination</u>
25	0.033%	2.40%
30	0.039%	2.40%
40	0.105%	2.00%
50	0.423%	1.60%
55	0.794%	1.20%
60	1.395%	0.20%

(3) Select Rates of Termination:

<u>Years of Service</u>	<u>Select Termination</u>
1	25.0%
2	8.0%
3	5.0%
4	4.0%
5	3.5%

(4) Compensation Progression:

<u>Age</u>	<u>Rate of Annual Increase</u>	<u>Compensation at Normal Retirement as Percentage Of Current Annual Compensation</u>
25	6.50%	1,241.6%
30	6.50%	906.2%
40	6.50%	482.8%
50	6.50%	257.2%
55	6.50%	187.7%
60	6.50%	137.0%

*Sample rates for hazardous position employees are included in the State Police Retirement System valuation.

SECTION III

RESULTS OF THE 1999 ACTUARIAL VALUATION

Determination of Contribution Rate

The rate of contribution by the State required to provide 30 year amortization of the Unfunded Actuarial Accrued Liability under the level-percentage-of-payroll method, the employer share of the Normal Cost, medical insurance and the expenses of administration, is shown in Table I. The required contribution is expressed both in dollars and as a percentage of the estimated annual State payroll as of June 30, 1999.

The actuarial methods applied to determine the Normal Cost for the year commencing July 1, 1999 are described in Section II. These costs are classified by type of benefit. The Normal Cost contribution rate of the State is determined by reducing the total Normal Cost by the expected employee contributions. A breakdown of actuarial liabilities and costs between Hazardous and Non-Hazardous position employees appears in Table II for the Retirement Fund and Table IV for the Insurance Fund. A breakdown of the total Unfunded Actuarial Accrued Liability into the amortization amounts by year is shown in Table III for the Retirement Fund and Table V for the Insurance Fund. Table VI has been included to show an estimate of projected payouts from the funds over the next 10 years based on current plan provisions and actuarial assumptions.

Actuarial Balance Sheet

Table VII is the actuarial balance sheet of the Kentucky Employees Retirement System as of June 30, 1999 for the Retirement Fund. Table VIII is the actuarial balance sheet for the Insurance Fund. The "actuarial balance sheet" displays the fundamental relationship between actual assets, future contributions, and future benefits. The asset side of the balance sheet is comprised of actual fund assets plus the actuarial present value of future contributions on behalf of current members. The actuarial present values of all projected benefit payments to present active and inactive members make up the balance sheet liabilities.

Accountant's Information

Table IX contains additional information needed to comply with GASB disclosure requirements for the Retirement Fund.

Table X contains information needed to comply under GASB Statement No. 12 relative to the Insurance Fund.

TABLE I KENTUCKY EMPLOYEES RETIREMENT SYSTEM RETIREMENT AND INSURANCE FUND DETERMINATION OF CONTRIBUTION RATE - JUNE 30, 1999		
UNFUNDED ACTUARIAL ACCRUED LIABILITY - RETIREMENT FUND		
		Percent *
Total Actuarial Accrued Liability	\$ 4,531,905,609	315.83%
Assets at Actuarial Value	5,524,179,716	384.99%
Unfunded Actuarial Accrued Liability	\$ (992,274,107)	(69.16%)
Contribution - Payment on Unfunded Actuarial Accrued Liability	\$ (47,957,285)	(3.34%)
NORMAL COST - RETIREMENT FUND		
Retirement Benefits	\$ 114,108,458	7.95%
Disability Benefits	10,610,307	0.74%
Withdrawal Benefits (Vested and Refund of Contributions)	9,494,873	0.66%
Survivor Benefits	7,790,507	0.54%
Total Normal Cost	\$ 142,004,145	9.89%
Less: Employee Contributions	73,088,560	5.09%
Normal Cost - State	\$ 68,915,585	4.80%
TOTAL ANNUAL EMPLOYER COST - RETIREMENT AND INSURANCE FUND		
Non-Hazardous Duty Cost		
Normal Cost	\$ 58,116,404	4.37% **
Payment on Unfunded Actuarial Accrued Liability	(45,160,890)	(3.39%) **
Administrative Expense	6,229,787	0.47% **
Group Hospital and Medical Insurance Premiums	59,093,623	4.44% **
Total Annual Cost	\$ 78,278,924	5.89% **
Hazardous Duty Cost		
Normal Cost	\$ 10,799,181	10.39% ***
Payment on Unfunded Actuarial Accrued Liability	(2,796,395)	(2.69%) ***
Administrative Expense	405,951	0.39% ***
Group Hospital and Medical Insurance Premiums	11,176,791	10.75% ***
Total Annual Cost	\$ 19,585,528	18.84% ***
Based on estimated annual salaries		
* Total	\$ 1,434,907,608	
** Non-Hazardous Position Employees	\$ 1,330,937,460	
*** Hazardous Position Employees	\$ 103,970,148	

TABLE II KENTUCKY EMPLOYEES RETIREMENT SYSTEM RETIREMENT FUND CLASSIFICATION OF ACTUARIAL LIABILITIES AND COSTS - JUNE 30, 1999			
	Non-Hazardous Position Employees	Hazardous Position Employees	Total
ACTUARIAL ACCRUED LIABILITY			
Active Members			
Retirement Benefits	\$ 2,100,836,396	\$ 138,941,239	\$ 2,239,777,635
Disability Benefits	124,370,099	6,559,153	130,929,252
Withdrawal Benefits (Vested and Refund of Contributions)	79,076,893	964,447	80,041,340
Survivor Benefits	139,921,587	5,764,314	145,685,901
Total - Actives	\$ 2,444,204,975	\$ 152,229,153	\$ 2,596,434,128
Inactive Members			
Retired Members and Beneficiaries	\$ 1,843,014,447	\$ 50,456,606	\$ 1,893,471,053
Vested Retirement	30,219,543	1,056,541	31,276,084
Vested Membership	10,183,856	540,488	10,724,344
Total - Inactives	\$ 1,883,417,846	\$ 52,053,635	\$ 1,935,471,481
Total Actuarial Accrued Liability	\$ 4,327,622,821	\$ 204,282,788	\$ 4,531,905,609
UNFUNDED ACTUARIAL ACCRUED LIABILITY			
Total Actuarial Accrued Liability	\$ 4,327,622,821	\$ 204,282,788	\$ 4,531,905,609
Less Actuarial Value of Assets	5,264,340,397	259,839,319	5,524,179,716
Unfunded Actuarial Accrued Liability	\$ (936,717,576)	\$ (55,556,531)	\$ (992,274,107)
NORMAL COST			
Retirement Benefits	\$ 99,059,512	\$ 15,048,946	\$ 114,108,458
Disability Benefits	9,325,300	1,285,007	10,610,307
Withdrawal Benefits (Vested and Refund of Contributions)	8,934,740	560,133	9,494,873
Survivor Benefits	6,987,870	802,637	7,790,507
Total Normal Cost	\$ 124,307,422	\$ 17,696,723	\$ 142,004,145
Less Employee Contributions	66,191,018	6,897,542	73,088,560
Total Normal Cost - State	\$ 58,116,404	\$ 10,799,181	\$ 68,915,585
ACCRUED BENEFIT LIABILITY *			
Total	\$ 2,954,408,147	\$ 153,794,369	\$ 3,108,202,516
* Present value of accrued benefits deferred to normal retirement date.			

TABLE III

KENTUCKY EMPLOYEES RETIREMENT SYSTEM

UNFUNDED ACTUARIAL ACCRUED LIABILITY - RETIREMENT FUND - JUNE 30, 1999

Date Established	Amount of Base on		Amortization Payment	Source of Base
	Date Established	Current Valuation Date		
Non-Hazardous Position Employees				
6/30/1990	\$ 256,534,456	\$ 312,336,340	\$ 19,834,607	Cumulative unfunded actuarial accrued liability set up as initial base under revised funding policy (30 year level percent of payroll method)
6/30/1991	103,692,389	124,3726	7,642,170	Experience gains/losses for 7/1/90 to 6/30/91
6/30/1992	(212,448,599)	(250,530,914)	(14,925,129)	Experience gains/losses for 7/1/91 to 6/30/92; Retiree COLA's; Asset valuation method change
6/30/1993	(57,917,315)	(67,027,653)	(3,878,488)	Experience gains/losses for 7/1/92 to 6/30/93; State contribution shortfall
6/30/1994	59,519,052	67,485,872	3,799,252	Experience gains/losses for 7/1/93 to 6/30/94; Retiree COLA's; State contribution shortfall
6/30/1995	65,659,241	72,827,622	3,995,032	Experience gains/losses for 7/1/94 to 6/30/95
6/30/1996	(188,573,585)	(204,319,150)	(10,936,387)	Experience gains/losses for 7/1/95 to 6/30/96; Revised actuarial assumptions; Correction of pension allocation for members in pay status with both non-hazardous and hazardous service in KERS
6/30/1997	(277,888,742)	(293,493,853)	(15,348,848)	Experience gains/losses for 7/1/96 to 6/30/97; 2.8% retiree COLA effective 8/1/96
6/30/1998	(326,522,755)	(335,752,845)	(17,176,444)	Experience gains/losses for 7/1/97 to 6/30/98; Increase in death benefit from \$2,500 to \$5,000; 3.0% retiree COLA effective 7/1/97
6/30/1999	(362,615,121)	(362,615,121)	(18,166,655)	Experience gains/losses for 7/1/98 to 6/30/99; 2.3% retiree COLA effective 7/1/98; Benefit multiplier change effective 2/1/99
Total	\$ (940,560,979)	\$ (936,717,576)	\$ (45,160,890)	

TABLE III (Continued)

KENTUCKY EMPLOYEES RETIREMENT SYSTEM

UNFUNDED ACTUARIAL ACCRUED LIABILITY - RETIREMENT FUND - JUNE 30, 1999

Date Established	Amount of Base on		Amortization Payment	Source of Base
	Date Established	Current Valuation Date		
Hazardous Position Employees				
6/30/1990	\$ (366,782)	\$ (446,565)	\$ (28,359)	Cumulative unfunded actuarial accrued liability set up as initial base under revised funding policy (30 year level percent of payroll method)
6/30/1991	8,515,857	10,214,205	627,622	Experience gains/losses for 7/1/90 to 6/30/91
6/30/1992	(2,222,347)	(2,620,712)	(156,126)	Experience gains/losses for 7/1/91 to 6/30/92; Retiree COLA's; Asset valuation method change
6/30/1993	1,873,766	2,168,505	125,478	Experience gains/losses for 7/1/92 to 6/30/93; State contribution shortfall
6/30/1994	2,736,468	3,102,754	174,676	Experience gains/losses for 7/1/93 to 6/30/94; Retiree COLA's; State contribution shortfall
6/30/1995	4,677,834	5,188,537	284,622	Experience gains/losses for 7/1/94 to 6/30/95
6/30/1996	(33,735,166)	(36,551,994)	(1,956,482)	Experience gains/losses for 7/1/95 to 6/30/96; Revised actuarial assumptions; Correction of pension allocation for members in pay status with both non-hazardous and hazardous service in KERS
6/30/1997	(7,971,975)	(8,419,648)	(440,322)	Experience gains/losses for 7/1/96 to 6/30/97; 2.8% retiree COLA effective 8/1/96
6/30/1998	(13,896,455)	(14,289,278)	(731,011)	Experience gains/losses for 7/1/97 to 6/30/98; Revised average salary definition from 5 years to 3 years; Increase in death benefit from \$2,500 to \$5,000; 3.0% retiree COLA effective 7/1/97
6/30/1999	(13,902,335)	(13,902,335)	(696,493)	Experience gains/losses for 7/1/98 to 6/30/99; 2.3% retiree COLA effective 7/1/98
Total	\$ (54,291,135)	\$ (55,556,531)	\$ (2,796,395)	

<p style="text-align: center;">TABLE IV KENTUCKY EMPLOYEES RETIREMENT SYSTEM INSURANCE FUND DETERMINATION OF ENTRY AGE CONTRIBUTION RATE - JUNE 30, 1999</p>			
	Non-Hazardous Position Employees	Hazardous Position Employees	Total
ACTUARIAL ACCRUED LIABILITY			
Active Members	\$ 798,031,882	\$ 103,055,781	\$ 901,087,663
Inactive Members			
Retired Members	\$ 433,801,021	\$ 34,519,326	\$ 468,320,347
Beneficiaries	764,482	9,464,804	10,229,286
Vested Retirement	40,767,415	2,118,675	42,886,090
Vested Membership	0	0	0
Total - Inactives	\$ 475,332,918	\$ 46,102,805	\$ 521,435,723
Total Actuarial Accrued Liability	\$ 1,273,364,800	\$ 149,158,586	\$ 1,422,523,386
UNFUNDED ACTUARIAL ACCRUED LIABILITY			
Total Actuarial Accrued Liability	\$ 1,273,364,800	\$ 149,158,586	\$ 1,422,523,386
Less Actuarial Value of Assets	283,704,887	74,579,649	358,284,536
Unfunded Actuarial Accrued Liability	\$ 989,659,913	\$ 74,578,937	\$ 1,064,238,850
NORMAL COST			
Gross Normal Cost	\$ 67,203,596	\$ 15,536,336	\$ 82,739,932
Less Employee Contributions	0	0	0
Net Normal Cost - State	\$ 67,203,596	\$ 15,536,336	\$ 82,739,932
Estimated Annual Salaries	\$ 1,330,937,460	\$ 103,970,148	\$ 1,434,907,608
TOTAL ANNUAL EMPLOYER COST			
Contribution Amount			
Normal Cost	\$ 67,203,596	\$ 15,536,336	\$ 82,739,932
Payment on Unfunded Actuarial Accrued Liability	53,201,536	4,000,978	57,202,514
Total Annual Cost	\$ 120,405,132	\$ 19,537,314	\$ 139,942,446
As Percent of Payroll			
Normal Cost	5.05%	14.94%	5.77%
Payment on Unfunded Actuarial Accrued Liability	4.00%	3.85%	3.99%
Total Annual Cost	9.05%	18.79%	9.76%
INSURANCE FUND SHORTFALL			
Full Entry Age Funding Level	9.05%	18.79%	9.76%
Current Funding Allocation *	4.44%	10.75%	4.90%
Additional to Pick Up By 2016	4.61%	8.04%	4.86%
Expected Increase in Insurance Fund Rate in 2001 Valuation	0.18%	0.34%	N/A
* Without regard to special adjustment for actuarial gains in even numbered valuation years			

TABLE V				
KENTUCKY EMPLOYEES RETIREMENT SYSTEM				
UNFUNDED ACTUARIAL ACCRUED LIABILITY - INSURANCE FUND - JUNE 30, 1999				
Date Established	Amount of Base on		Amortization Payment	Source of Base
	Date Established	Current Valuation Date		
Non-Hazardous Position Employees				
6/30/1996	\$ 988,745,810	\$1,071,304,358	\$ 57,342,637	Cumulative unfunded actuarial accrued liability set up as initial base under revised funding policy (30 year level percent of payroll method)
6/30/1997	(31,222,593)	(32,975,928)	(1,724,542)	Experience gains/losses for 7/1/96 to 6/30/97; Impact of actual insurance fund contributions vs. full entry age amounts
6/30/1998	19,914,214	20,477,146	1,047,570	Experience gains/losses for 7/1/97 to 6/30/98; Impact of actual insurance fund contributions vs. full entry age amounts
6/30/1999	(69,145,663)	(69,145,663)	(3,464,129)	Experience gains/losses for 7/1/98 to 6/30/99; Impact of actual insurance fund contributions vs. full entry age amounts
Total	\$ 908,291,768	\$ 989,659,913	\$ 53,201,536	
Hazardous Position Employees				
6/30/1996	\$ 61,002,123	\$ 66,095,695	\$ 3,537,838	Cumulative unfunded actuarial accrued liability set up as initial base under revised funding policy (30 year level percent of payroll method)
6/30/1997	15,100,456	15,948,437	834,055	Experience gains/losses for 7/1/96 to 6/30/97; Impact of actual insurance fund contributions vs. full entry age amounts
6/30/1998	2,832,306	2,912,369	148,991	Experience gains/losses for 7/1/97 to 6/30/98; Impact of actual insurance fund contributions vs. full entry age amounts
6/30/1999	(10,377,564)	(10,377,564)	(519,906)	Experience gains/losses for 7/1/98 to 6/30/99; Impact of actual insurance fund contributions vs. full entry age amounts
Total	\$ 68,557,321	\$ 74,578,937	\$ 4,000,978	

TABLE VI
KENTUCKY EMPLOYEES RETIREMENT SYSTEM
BENEFIT PAYMENT PROJECTIONS

RETIREMENT FUND PAYMENT PROJECTIONS			
Plan Year	Non-Hazardous Position Employees	Hazardous Position Employees	Total
7/1/1999 to 6/30/2000	233,651,000	7,268,000	240,919,000
7/1/2000 to 6/30/2001	247,568,000	8,396,000	255,964,000
7/1/2001 to 6/30/2002	262,349,000	9,687,000	272,036,000
7/1/2002 to 6/30/2003	278,604,000	11,448,000	290,052,000
7/1/2003 to 6/30/2004	296,080,000	13,213,000	309,293,000
7/1/2004 to 6/30/2005	316,911,000	15,067,000	331,978,000
7/1/2005 to 6/30/2006	340,666,000	17,113,000	357,779,000
7/1/2006 to 6/30/2007	368,134,000	19,559,000	387,693,000
7/1/2007 to 6/30/2008	397,233,000	23,082,000	420,315,000
7/1/2008 to 6/30/2009	427,746,000	27,032,000	454,778,000
INSURANCE FUND PAYMENT PROJECTIONS			
Plan Year	Non-Hazardous Position Employees	Hazardous Position Employees	Total
7/1/1999 to 6/30/2000	30,732,000	2,612,000	33,344,000
7/1/2000 to 6/30/2001	34,280,000	3,017,000	37,297,000
7/1/2001 to 6/30/2002	38,263,000	3,508,000	41,771,000
7/1/2002 to 6/30/2003	42,883,000	4,168,000	47,051,000
7/1/2003 to 6/30/2004	47,949,000	4,910,000	52,859,000
7/1/2004 to 6/30/2005	53,831,000	5,735,000	59,566,000
7/1/2005 to 6/30/2006	60,709,000	6,668,000	67,377,000
7/1/2006 to 6/30/2007	68,415,000	7,765,000	76,180,000
7/1/2007 to 6/30/2008	76,312,000	9,186,000	85,498,000
7/1/2008 to 6/30/2009	85,436,000	10,863,000	96,299,000
<p>Projected benefit payments reflect future actual experience consistent with actuarial assumptions used in current annual valuation. Future cost-of-living adjustments of 3% per annum have been assumed in retirement benefit amounts. Insurance fund payments reflect future medical inflation rates consistent with the valuation assumption. There has not been any assumption made as to the number of future new entrants who may enter the plan. Nor has any provision been made for any change in the basic benefit structure of the plan beyond changes already legislated.</p>			

TABLE VII
KENTUCKY EMPLOYEES RETIREMENT SYSTEM
RETIREMENT FUND
ACTUARIAL BALANCE SHEET -- JUNE 30, 1999

ACTUARIAL ASSETS		
Fund Assets at Actuarial Value (Plus Refunds and Expenses Payable) *		\$ 5,536,375,160
Actuarial Present Value of Future Member Contributions		870,762,889
Actuarial Present Value of Future Employer Contributions		
For Normal Costs	\$ 761,267,667	
For Unfunded Actuarial Accrued Liability	(992,274,107)	
Total		\$ (231,006,440)
Total Actuarial Assets		\$ 6,176,131,609
ACTUARIAL LIABILITIES		
Actuarial Present Value of Future Benefits		
Inactive Members:		
Retired Members and Beneficiaries	\$ 1,893,471,053	
Vested Retirement	31,276,084	
Vested Membership	10,724,344	
Total - Inactive		\$ 1,935,471,481
Actuarial Present Value of Future Benefits		
Active Members:		
Retirement Benefits	\$ 3,545,422,624	
Disability Benefits	251,510,097	
Withdrawal Benefits (Vested and Refund of Contributions)	197,955,800	
Survivor Benefits	233,576,163	
Total - Active		\$ 4,228,464,684
Refunds and Expenses Payable		\$ 12,195,444
Total Actuarial Liabilities		\$ 6,176,131,609
ACCRUED BENEFIT LIABILITY **		
Total		\$ 3,108,202,516
Notes		
* Values as of June 30, 1999		
Market value of assets:	Non-Hazardous	\$ 5,841,831,841
	Hazardous	\$ 278,898,663
	Total	\$ 6,120,730,504
Actuarial value of assets:		\$ 5,524,179,716
Member's Contribution Account:		\$ 862,558,335
** Present value of accrued benefit deferred to normal retirement date.		

TABLE VIII
KENTUCKY EMPLOYEES RETIREMENT SYSTEM
INSURANCE FUND
ACTUARIAL BALANCE SHEET -- JUNE 30, 1999

ACTUARIAL ASSETS		
Fund Assets at Actuarial Value (Plus Refunds and Expenses Payable) *		\$ 358,373,068
Actuarial Present Value of Future Member Contributions (Note: All Future Member Contributions Credited Against Retirement Fund)		0
Actuarial Present Value of Future Employer Contributions		
For Normal Costs	\$ 1,017,209,287	
For Unfunded Actuarial Accrued Liability	1,064,238,850	
Total		\$ 2,081,448,137
Total Actuarial Assets		\$ 2,439,821,205
ACTUARIAL LIABILITIES		
Actuarial Present Value of Future Benefits		
Inactive Members:		
Retired Members and Beneficiaries	\$ 478,549,633	
Vested Retirement	42,886,090	
Vested Membership	0	
Total - Inactive		\$ 521,435,723
Actuarial Present Value of Future Benefits		
Active Members:		\$ 1,918,296,950
Refunds and Expenses Payable		\$ 88,532
Total Actuarial Liabilities		\$ 2,439,821,205
Notes		
* Values as of June 30, 1999		
Market value of assets:	Non-Hazardous	\$ 315,405,720
	Hazardous	\$ 82,635,100
	Total	\$ 398,040,820
Actuarial value of assets:		\$ 358,284,536

TABLE IX KENTUCKY EMPLOYEES RETIREMENT SYSTEM ACCOUNTANT'S INFORMATION - RETIREMENT FUND - JUNE 30, 1999 GASB DISCLOSURE INFORMATION			
	Non-Hazardous Position Employees	Hazardous Position Employees	Total
NUMBER OF MEMBERS			
Inactive Members			
Retired Members	18,459	678	19,137
Beneficiaries	3,482	102	3,584
Vested Retirements	2,978	96	3,074
Vested Membership	11,512	516	12,028
Total Inactive Members	36,431	1,392	37,823
Active Members			
Vested Members	32,097	2,093	34,190
Nonvested Members	13,727	1,796	15,523
Total Active Members	45,824	3,889	49,713
Total Members	82,255	5,281	87,536

TABLE X
KENTUCKY EMPLOYEES RETIREMENT SYSTEM
ACCOUNTANT'S INFORMATION - INSURANCE FUND - JUNE 30, 1999
INFORMATION REQUIRED UNDER GASB STATEMENT NO. 12

		Non-Hazardous Position Employees	Hazardous Position Employees	Total
NUMBER OF MEMBERS				
Contracts in Force - Retirees and Dependents				
(1) Single;	- 100% Paid	2,727	149	2,876
Pre-Medicare	- 75% Paid	225	21	246
	- 50% Paid	174	28	202
	- 25% Paid	131	15	146
	- 0% Paid	588	0	588
(2) Family;	- 100% Paid	229	56	285
Pre-Medicare	- 75% Paid	6	3	9
	- 50% Paid	5	1	6
	- 25% Paid	6	1	7
	- 0% Paid	2	0	2
(3) Parent +;	- 100% Paid	125	24	149
Pre-Medicare	- 75% Paid	17	3	20
	- 50% Paid	4	1	5
	- 25% Paid	2	0	2
	- 0% Paid	46	0	46
(4) Couple;	- 100% Paid	478	69	547
Pre-Medicare	- 75% Paid	28	8	36
	- 50% Paid	14	11	25
	- 25% Paid	13	5	18
	- 0% Paid	5	0	5
(5) Medicare Regular	- 100% Paid	51	2	53
	- 75% Paid	252	7	259
	- 50% Paid	416	15	431
	- 25% Paid	395	10	405
	- 0% Paid	671	0	671
(6) Medicare High Option	- 100% Paid	5,247	211	5,458
	- 75% Paid	1,648	44	1,692
	- 50% Paid	1,248	61	1,309
	- 25% Paid	619	19	638
	- 0% Paid	1,757	0	1,757
Vested Retirements		2,978	96	3,074
Vested Membership		11,512	516	12,028
Active Members		45,824	3,889	49,713

UNFUNDED MEDICAL BENEFIT OBLIGATION

Medical Benefit Obligation			
Retirees, Beneficiaries and Vested Terminated Members	\$ 475,332,918	\$ 46,102,805	\$ 521,435,723
Active Members	798,031,882	103,055,781	901,087,663
Total Medical Benefit Obligation	\$ 1,273,364,800	\$ 149,158,586	\$ 1,422,523,386
Net Assets at Actuarial Value	\$ 283,704,887	\$ 74,579,649	\$ 358,284,536
Unfunded Medical Benefit Obligation	\$ 989,659,913	\$ 74,578,937	\$ 1,064,238,850

NOTE: Medical Benefit Obligation based on Entry Age Normal Actuarial Cost Method

SECTION IV

COMMENTS AND CERTIFICATION

Comments

For the Retirement Fund, the total Actuarial Accrued Liability has increased from \$3,971,749,822 on June 30, 1998 to \$4,531,905,609 on June 30, 1999. The Unfunded Actuarial Accrued Liability has decreased from \$(596,537,421) to \$(992,274,107). Total actuarial value of assets as of June 30, 1999 was equal to \$5,524,179,716. The Unfunded Actuarial Accrued Liability decreased from (43.83%) to (69.16%) as a percentage of annual payroll and decreased from (15.0%) to (21.9%) as a percentage of the Actuarial Accrued Liability in the year ended June 30, 1999.

For the Insurance Fund, the total Actuarial Accrued Liability has increased from \$1,379,578,155 on June 30, 1998 to \$1,422,523,386 on June 30, 1999. The Unfunded Actuarial Accrued Liability has decreased from \$1,114,866,185 to \$1,064,238,850. Total actuarial value of assets as of June 30, 1999 was equal to \$358,284,536. The Unfunded Actuarial Accrued Liability decreased from 80.8% to 74.8% as a percentage of the Actuarial Accrued Liability in the year ended June 30, 1999.

The change in contribution rate between the 1998 and 1999 valuations is a function of actual plan experience since the last valuation. A formal gain and loss analysis would identify the portion of the contribution rate change attributable to each element of plan experience and benefit change. However, undertaking such an analysis would be extremely time consuming and expensive. In lieu of the formal analysis, we have estimated the impact of the various components of gain and loss based on changes in statistical averages of each group. The following table shows the results of this computation:

	Non-Hazardous Position Employees	Hazardous Position Employees
June 30, 1998 Contribution Rate	8.03%	18.91%
Change in Payment Percentage Due to Covered Payroll Experience	(0.01%)	0.23%
Investment Return	(2.17%)	(1.03%)
Salary Increases	0.17%	0.37%
Decrement Experience*	0.06%	(0.02%)
Change in Insurance Fund Rate		
• Elimination of Prior Year Temporary Increase	(1.19%)	N/A
• Increase in Long Term Funding Rate	0.18%	0.35%
Change in Administrative Expense Rate	(0.01%)	(0.02%)
Retiree COLA effective 7/1/98	0.16%	0.05%
Legislated Benefit Improvements		
• Effective 2/1/99 Change in Benefit Multiplier from 1.97% to 2.00% Plus 2.20% "Temporary" Rate if Retire between 2/1/1999 and 1/31/2009 with 20 years service (nonhazardous)	0.67%	N/A
June 30, 1999 Contribution Rate	5.89%	18.84%
* Includes mortality, disability, termination of employment and retirement experience.		

The annual State contribution rate required to provide the Normal Cost, 30 year amortization of the Unfunded Actuarial Accrued Liability under the level-percentage-of-payroll method, and pay administrative expenses for Non-Hazardous position employees was determined at 1.45%. An additional 4.44% is required to fund medical insurance for retirees, bringing the required contribution up to 5.89%. This is less than the current 8.03% budgeted contribution rate. Therefore, it is our opinion that the contribution rate beginning July 1, 2000 should be adjusted to the 5.89% level, and we so recommend.

The annual State contribution rate required to provide the Normal Cost, 30 year amortization of the Unfunded Actuarial Accrued Liability under the level-percentage-of-payroll method, and pay administrative expenses for Hazardous position employees was determined at 8.09%. An additional 10.75% is required to fund medical insurance for retirees, bringing the required contribution up to 18.84%. This is less than the current 18.91% budgeted contribution rate. Therefore, it is our opinion that the contribution rate beginning July 1, 2000 should be adjusted to the 18.84% level, and we so recommend.

The recommended contribution rates are based on current statutory benefits. The budgeted contribution rates will again be reviewed in the June 30, 2000 valuation.

The following table shows the total Actuarial Accrued Liability, the Unfunded Actuarial Accrued Liability, percent unfunded and the growth of the invested assets relative to retirement related benefits at selected intervals since the inception of the System.

KENTUCKY EMPLOYEES RETIREMENT SYSTEM - RETIREMENT FUND					
July 1 of Year Shown	Total Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Percent Unfunded	Actuarial Value of Assets	Increase in Assets
1956	\$ 16,200,000	\$ 16,200,000	100.0%	\$ 0	\$ 0
1961	49,201,024	31,670,465	64.4%	17,530,559	4,479,508
1966	127,889,238	72,137,125	56.4%	55,752,113	9,085,814
1971	185,075,453	59,614,477	32.2%	125,460,976*	18,353,116
1975	296,343,758	77,434,549	26.1%	218,909,209*	26,529,526
1976	387,214,910	130,838,120	33.8%	256,376,790*	37,467,581
1977	446,255,236	149,511,331	33.5%	296,743,905*	40,367,115
1978	507,324,915	168,497,917	33.2%	338,826,998*	42,083,093
1979	592,095,113	202,676,662	34.2%	389,418,451*	50,591,453
1980	710,126,703	249,770,835	35.2%	460,355,868*	70,937,417
1981	692,160,395	164,735,129	23.8%	527,425,266	67,069,398
1982	810,250,589	195,803,691	24.2%	614,446,898	87,021,632
1983	862,291,959	152,196,081	17.7%	710,095,878	95,648,980
1984	1,016,088,830	201,535,007	19.8%	814,553,823	104,457,945
1985	1,104,429,988	169,949,215	15.4%	934,480,773	119,926,950
1986	1,245,083,143	166,635,243	13.4%	1,079,353,421	144,872,648
1987	1,384,259,808	120,259,389	8.7%	1,264,000,419	184,646,998
1988	1,561,743,738	135,687,336	8.7%	1,426,056,402	162,055,983
1989	1,734,607,903	145,998,805	8.4%	1,588,609,098	162,552,696
1990	2,055,489,412	256,167,674	12.5%	1,799,321,738	210,712,640
1991	2,288,611,147	375,396,216	16.4%	1,913,214,931	113,893,193
1992**	2,525,190,930	170,708,609	6.8%	2,354,482,321	441,267,390
1993	2,703,771,076	118,561,539	4.4%	2,585,209,537	230,727,216
1994	2,912,050,275	183,001,288	6.3%	2,729,048,987	143,839,450
1995	3,240,852,288	257,038,750	7.9%	2,983,813,538	244,764,551
1996	3,415,404,483	40,108,906	1.2%	3,375,295,577	391,482,039
1997	3,603,966,110	(246,746,133)	(6.8%)	3,850,712,243	475,416,666
1998	3,971,749,822	(596,537,421)	(15.0%)	4,568,287,243	717,575,000
1999	4,531,905,609	(992,274,107)	(21.9%)	5,524,179,716	955,892,473
*Includes capitalized appreciation of investments.					
**Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.					

The following table shows the total Actuarial Accrued Liability, the Unfunded Actuarial Accrued Liability, percent unfunded and the growth of the invested assets relative to medical premium benefits since 1990.

KENTUCKY EMPLOYEES RETIREMENT SYSTEM - INSURANCE FUND					
July 1 of Year Shown	Total Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Percent Unfunded	Actuarial Value of Assets	Increase in Assets
1990	\$ 719,493,806	\$ 686,770,874	95.5%	\$ 32,722,932	\$ N/A
1991	804,674,050	758,124,715	94.2%	46,549,335	13,826,403
1992	1,001,703,695	939,238,069	93.8%	62,465,626	15,916,291
1993	1,177,861,283	1,100,187,708	93.4%	77,673,575	15,207,949
1994	1,444,612,678	1,345,529,145	93.1%	99,083,533	21,409,958
1995	1,462,174,101	1,334,881,910	91.3%	127,292,191	28,208,658
1996**	1,222,394,138	1,049,747,933	85.9%	172,646,205	45,354,014
1997	1,274,464,242	1,063,299,895	83.4%	211,164,347	38,518,142
1998	1,379,578,155	1,114,866,185	80.8%	264,711,970	53,547,623
1999	1,422,523,386	1,064,238,850	74.8%	358,284,536	93,572,566
**Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.					

Certification

On the basis of the actuarial assumptions given and the data furnished by the General Manager of the Kentucky Employees Retirement System, it is certified that the actuarial valuation has been made by the use of accepted actuarial principles and that adequate provision is being made for the funding of future benefits.

I, Stephen A. Gagel, am a Fellow of the Society of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



Stephen A. Gagel, F.S.A.

October 29, 1999

Date

I, Jeannette I. Moermond, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



Jeannette I. Moermond

October 29, 1999

Date

William M. Mercer, Incorporated
462 South Fourth Avenue, Suite 1500
Louisville, Kentucky 40202-3431
①(502) 561-4500

SECTION V
STATISTICAL DATA
AS OF
JUNE 30, 1999

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
JUNE 30, 1999

EARNINGS BY AGE GROUPS

AGE GROUP	.....MALE.....			.....FEMALE.....			.....TOTAL.....		
	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE
0-19	637	11,260,824	17,678	82	1,510,020	18,415	719	12,770,844	17,762
20-24	927	17,351,640	18,718	850	13,489,068	15,869	1,777	30,840,708	17,355
25-29	1,460	30,485,292	20,880	2,492	50,857,668	20,408	3,952	81,342,960	20,583
30-34	1,837	47,350,692	25,776	2,967	68,409,468	23,057	4,804	115,760,160	24,097
35-39	2,278	69,011,076	30,295	3,688	92,330,280	25,035	5,966	161,341,356	27,043
40-44	2,780	92,476,152	33,265	4,466	122,449,980	27,418	7,246	214,926,132	29,661
45-49	3,175	116,245,176	36,613	4,727	141,125,220	29,855	7,902	257,370,396	32,570
50-54	2,831	115,542,672	40,813	3,792	115,034,676	30,336	6,623	230,577,348	34,815
55-59	1,687	65,872,488	39,047	2,352	68,490,816	29,120	4,039	134,363,304	33,266
60-64	910	34,817,988	38,262	1,080	30,634,848	28,366	1,990	65,452,836	32,891
65-69	267	11,097,084	41,562	309	8,303,172	26,871	576	19,400,256	33,681
70-74	75	2,586,900	34,492	85	2,173,968	25,576	160	4,760,868	29,755
75+	35	1,245,048	35,573	35	874,116	24,975	70	2,119,164	30,274
TOTAL	18,899	615,343,032	32,560	26,925	715,683,300	26,581	45,824	1,331,026,332	29,046

EARNINGS BY SERVICE GROUPS

SERVICE GROUP	.....MALE.....			.....FEMALE.....			.....TOTAL.....		
	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE
0	1,364	24,910,212	18,263	1,305	21,310,824	16,330	2,669	46,221,036	17,318
1	1,733	38,188,296	22,036	2,140	41,535,816	19,409	3,873	79,724,112	20,585
2	1,384	33,146,484	23,950	2,002	40,791,672	20,375	3,386	73,938,156	21,836
3	1,046	26,503,476	25,338	1,576	33,858,624	21,484	2,622	60,362,100	23,021
4	903	26,278,248	29,101	1,467	33,568,788	22,883	2,370	59,847,036	25,252
0-4	6,430	149,026,716	23,177	8,490	171,065,724	20,149	14,920	320,092,440	21,454
5-9	3,346	98,425,356	29,416	5,878	143,638,188	24,437	9,224	242,063,544	26,243
10-14	2,988	100,906,428	33,771	4,534	124,388,268	27,435	7,522	225,294,696	29,951
15-19	1,635	60,930,348	37,266	2,421	75,206,520	31,064	4,056	136,136,868	33,564
20-24	1,970	78,728,964	39,964	2,745	89,296,956	32,531	4,715	168,025,920	35,636
25-29	1,618	74,922,876	46,306	1,959	73,300,320	37,417	3,577	148,223,196	41,438
30-34	690	38,023,860	55,107	728	30,738,300	42,223	1,418	68,762,160	48,492
35-39	167	10,411,380	62,344	144	6,759,204	46,939	311	17,170,584	55,211
40+	55	3,967,104	72,129	26	1,289,820	49,608	81	5,256,924	64,900
TOTAL	18,899	615,343,032	32,560	26,925	715,683,300	26,581	45,824	1,331,026,332	29,046

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
JUNE 30, 1999

EARNINGS BY AGE GROUPS

AGE GROUP	.....MALE.....			.....FEMALE.....			.....TOTAL.....		
	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE
0-19	48	695,580	14,491	0	0	0	48	695,580	14,491
20-24	103	1,801,440	17,490	32	603,300	18,853	135	2,404,740	17,813
25-29	314	6,245,724	19,891	97	1,906,176	19,651	411	8,151,900	19,834
30-34	380	8,680,860	22,844	144	3,261,540	22,650	524	11,942,400	22,791
35-39	348	8,675,580	24,930	151	3,708,924	24,562	499	12,384,504	24,819
40-44	375	10,367,472	27,647	203	5,581,716	27,496	578	15,949,188	27,594
45-49	453	14,161,656	31,262	171	4,766,580	27,875	624	18,928,236	30,334
50-54	463	15,094,752	32,602	142	3,912,480	27,553	605	19,007,232	31,417
55-59	225	7,042,452	31,300	71	2,030,076	28,593	296	9,072,528	30,650
60-64	100	3,261,312	32,613	38	1,149,756	30,257	138	4,411,068	31,964
65-69	20	541,812	27,091	8	314,016	39,252	28	855,828	30,565
70-74	2	142,404	71,202	0	0	0	2	142,404	71,202
75+	1	24,540	24,540	0	0	0	1	24,540	24,540
TOTAL	2,832	76,735,584	27,096	1,057	27,234,564	25,766	3,889	103,970,148	26,734

EARNINGS BY SERVICE GROUPS

SERVICE GROUP	.....MALE.....			.....FEMALE.....			.....TOTAL.....		
	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE
0	194	3,022,404	15,579	80	1,430,148	17,877	274	4,452,552	16,250
1	436	11,321,208	25,966	136	2,814,636	20,696	572	14,135,844	24,713
2	206	4,412,784	21,421	116	2,502,768	21,576	322	6,915,552	21,477
3	171	4,052,112	23,697	81	1,901,712	23,478	252	5,953,824	23,626
4	135	3,107,088	23,015	73	1,851,444	25,362	208	4,958,532	23,839
0-4	1,142	25,915,596	22,693	486	10,500,708	21,606	1,628	36,416,304	22,369
5-9	1,231	34,420,236	27,961	467	13,175,460	28,213	1,698	47,595,696	28,030
10-14	245	7,849,788	32,040	53	1,723,776	32,524	298	9,573,564	32,126
15-19	136	5,251,824	38,616	38	1,365,516	35,935	174	6,617,340	38,031
20-24	51	2,060,316	40,398	13	469,104	36,085	64	2,529,420	39,522
25-29	24	1,080,912	45,038	0	0	0	24	1,080,912	45,038
30-34	3	156,912	52,304	0	0	0	3	156,912	52,304
35-39	0	0	0	0	0	0	0	0	0
40+	0	0	0	0	0	0	0	0	0
TOTAL	2,832	76,735,584	27,096	1,057	27,234,564	25,766	3,889	103,970,148	26,734

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
JUNE 30, 1999

SERVICE GROUPS BY AGE GROUPS

<u>MALE</u>										
AGE	SERVICE GROUP									
GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	623	9	3			1	1			637
20-24	889	38								927
25-29	1,131	312	17							1,460
30-34	870	624	322	21						1,837
35-39	708	518	682	292	78					2,278
40-44	668	494	575	419	536	88				2,780
45-49	588	457	485	354	610	599	82			3,175
50-54	498	407	375	252	366	545	353	35		2,831
55-59	288	249	272	153	215	238	176	89	7	1,687
60-64	120	166	177	97	121	110	56	33	30	910
65-69	33	53	48	31	34	26	19	9	14	267
70-74	10	11	30	10	5	6	1	1	1	75
75+	4	8	2	6	5	5	2		3	35
TOTAL	6,430	3,346	2,988	1,635	1,970	1,618	690	167	55	18,899

<u>FEMALE</u>										
AGE	SERVICE GROUP									
GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	68	2	3	1	2	5	1			82
20-24	827	19	1	1		2				850
25-29	1,871	579	42							2,492
30-34	1,307	1,086	538	36						2,967
35-39	1,211	995	910	412	159	1				3,688
40-44	1,163	967	791	533	810	202				4,466
45-49	896	907	789	518	666	772	179			4,727
50-54	646	676	682	422	490	506	328	42		3,792
55-59	324	407	470	280	370	284	142	69	6	2,352
60-64	126	180	223	161	156	150	48	26	10	1,080
65-69	37	44	62	43	70	20	20	5	8	309
70-74	12	10	18	11	16	10	6	1	1	85
75+	2	6	5	3	6	7	4	1	1	35
TOTAL	8,490	5,878	4,534	2,421	2,745	1,959	728	144	26	26,925

<u>TOTAL</u>										
AGE	SERVICE GROUP									
GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	691	11	6	1	2	6	2			719
20-24	1,716	57	1	1		2				1,777
25-29	3,002	891	59							3,952
30-34	2,177	1,710	860	57						4,804
35-39	1,919	1,513	1,592	704	237	1				5,966
40-44	1,831	1,461	1,366	952	1,346	290				7,246
45-49	1,484	1,364	1,274	872	1,276	1,371	261			7,902
50-54	1,144	1,083	1,057	674	856	1,051	681	77		6,623
55-59	612	656	742	433	585	522	318	158	13	4,039
60-64	246	346	400	258	277	260	104	59	40	1,990
65-69	70	97	110	74	104	46	39	14	22	576
70-74	22	21	48	21	21	16	7	2	2	160
75+	6	14	7	9	11	12	6	1	4	70
TOTAL	14,920	9,224	7,522	4,056	4,715	3,577	1,418	311	81	45,824

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
JUNE 30, 1999

SERVICE GROUPS BY AGE GROUPS

<u>MALE</u>										
AGE	SERVICE GROUP									
GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	47	1								48
20-24	102	1								103
25-29	253	61								314
30-34	198	168	14							380
35-39	125	164	47	12						348
40-44	105	184	37	40	9					375
45-49	117	219	42	45	24	6				453
50-54	105	240	66	27	14	11				463
55-59	60	120	25	9	3	5	3			225
60-64	24	60	10	3	1	2				100
65-69	5	12	3							20
70-74		1	1							2
75+	1									1
TOTAL	1,142	1,231	245	136	51	24	3	0	0	2,832

<u>FEMALE</u>										
AGE	SERVICE GROUP									
GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19										
20-24	30	2								32
25-29	90	7								97
30-34	74	66	4							144
35-39	68	65	10	8						151
40-44	84	75	19	17	8					203
45-49	72	78	8	8	5					171
50-54	45	88	7	2						142
55-59	17	51	2	1						71
60-64	6	27	3	2						38
65-69		8								8
70-74										0
75+										0
TOTAL	486	467	53	38	13	0	0	0	0	1,057

<u>TOTAL</u>										
AGE	SERVICE GROUP									
GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	47	1								48
20-24	132	3								135
25-29	343	68								411
30-34	272	234	18							524
35-39	193	229	57	20						499
40-44	189	259	56	57	17					578
45-49	189	297	50	53	29	6				624
50-54	150	328	73	29	14	11				605
55-59	77	171	27	10	3	5	3			296
60-64	30	87	13	5	1	2				138
65-69	5	20	3							28
70-74		1	1							2
75+	1									1
TOTAL	1,628	1,698	298	174	64	24	3	0	0	3,889

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
JUNE 30, 1999

AVERAGE EARNINGS FOR SERVICE GROUPS BY AGE GROUPS

AGE GROUP	SERVICE GROUP.....									TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
0-19	691	11	6	1	2	6	2			719
	17,150	27,039	39,740	28,800	30,354	38,486	32,028			17,762
20-24	1,716	57	1	1		2				1,777
	17,066	24,467	23,856	24,684		56,142				17,355
25-29	3,002	891	59							3,952
	19,920	22,526	24,934							20,583
30-34	2,177	1,710	860	57						4,804
	21,484	25,537	27,529	28,869						24,097
35-39	1,919	1,513	1,592	704	237	1				5,966
	22,848	25,975	30,336	31,513	32,471	20,220				27,043
40-44	1,831	1,461	1,366	952	1,346	290				7,246
	23,196	27,528	30,955	34,797	34,306	36,726				29,661
45-49	1,484	1,364	1,274	872	1,276	1,371	261			7,902
	23,268	27,511	30,597	35,114	37,315	41,256	44,217			32,570
50-54	1,144	1,083	1,057	674	856	1,051	681	77		6,623
	24,973	27,503	30,619	34,396	37,250	44,649	49,505	53,892		34,815
55-59	612	656	742	433	585	522	318	158	13	4,039
	23,575	26,709	29,171	32,453	34,914	39,504	50,494	55,959	59,411	33,266
60-64	246	346	400	258	277	260	104	59	40	1,990
	24,906	25,951	28,979	31,608	34,678	38,483	47,683	57,108	66,521	32,891
65-69	70	97	110	74	104	46	39	14	22	576
	25,223	24,322	29,380	31,353	35,220	44,232	49,933	47,253	64,408	33,681
70-74	22	21	48	21	21	16	7	2	2	160
	19,749	27,748	28,359	28,649	30,355	39,557	37,378	54,804	69,606	29,755
75+	6	14	7	9	11	12	6	1	4	70
	35,850	25,756	18,943	21,659	23,968	35,563	36,534	38,784	66,888	30,274
TOTAL	14,920	9,224	7,522	4,056	4,715	3,577	1,418	311	81	45,824
	21,454	26,243	29,951	33,564	35,636	41,438	48,492	55,211	64,900	29,046

TOTAL EARNINGS 1,330,937,460
AVERAGE SERVICE 42.83
AVERAGE AGE 11.06

Note: Earnings shown in this matrix have not been limited by 401(a)(17).

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
JUNE 30, 1999

AVERAGE EARNINGS FOR SERVICE GROUPS BY AGE GROUPS

AGE GROUP	SERVICE GROUP.....									
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	47	1								48
	14,012	36,996								14,491
20-24	132	3								135
	17,491	31,988								17,813
25-29	343	68								411
	19,438	21,832								19,834
30-34	272	234	18							524
	21,505	23,955	27,083							22,791
35-39	193	229	57	20						499
	21,857	25,547	29,532	31,627						24,819
40-44	189	259	56	57	17					578
	23,676	27,236	31,918	35,351	36,354					27,594
45-49	189	297	50	53	29	6				624
	26,565	29,247	36,231	38,169	38,688	44,114				30,334
50-54	150	328	73	29	14	11				605
	26,738	31,192	33,236	43,553	41,281	45,299				31,417
55-59	77	171	27	10	3	5	3			296
	26,844	30,187	30,910	46,487	52,224	46,104	52,304			30,650
60-64	30	87	13	5	1	2				138
	32,901	30,376	32,313	43,793	54,852	43,710				31,964
65-69	5	20	3							28
	25,805	31,744	30,640							30,565
70-74		1	1							2
		111,396	31,008							71,202
75+	1									1
	24,540									24,540
TOTAL	1,628	1,698	298	174	64	24	3	0	0	3,889
	22,369	28,030	32,126	38,031	39,522	45,038	52,304			26,734

TOTAL EARNINGS 103,970,148

AVERAGE AGE 41.82

AVERAGE SERVICE 6.40

Note: Earnings shown in this matrix have not been limited by 401(a)(17).

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
TABULATION BY MONTHLY SALARY
JUNE 30, 1999

MONTHLY SALARY		NUMBER OF MEMBERS		
		MALES	FEMALES	TOTAL
UNDER	\$ 500	143	149	292
\$ 500 -	\$ 749	150	173	323
\$ 750 -	\$ 999	410	802	1,212
\$1,000 -	\$1,249	1,344	2,279	3,623
\$1,250 -	\$1,499	1,727	2,998	4,725
\$1,500 -	\$1,749	1,777	3,531	5,308
\$1,750 -	\$1,999	1,697	3,377	5,074
\$2,000 -	\$2,249	1,551	2,829	4,380
\$2,250 -	\$2,499	1,562	2,484	4,046
\$2,500 -	\$2,749	1,365	2,068	3,433
\$2,750 -	\$2,999	1,083	1,587	2,670
\$3,000 -	\$3,499	1,719	2,010	3,729
\$3,500 -	\$3,999	1,256	1,133	2,389
\$4,000 -	\$4,499	920	678	1,598
\$4,500 -	\$4,999	641	383	1,024
\$5,000 -	\$5,499	483	195	678
\$5,500 -	\$5,999	360	90	450
\$6,000 -	\$6,499	215	58	273
\$6,500 -	\$6,999	143	22	165
\$7,000 -	\$7,499	138	33	171
\$7,500 AND OVER		215	46	261
TOTAL		18,899	26,925	45,824
HIGHLY COMPENSATED EMPLOYEES (ESTIMATED)				
ANNUAL SALARY OF \$80,000 AND OVER		425	91	516

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
TABULATION BY MONTHLY SALARY
JUNE 30, 1999

MONTHLY SALARY	NUMBER OF MEMBERS		
	MALES	FEMALES	TOTAL
UNDER \$ 500	15	1	16
\$ 500 - \$ 749	10	4	14
\$ 750 - \$ 999	32	11	43
\$1,000 - \$1,249	51	33	84
\$1,250 - \$1,499	226	112	338
\$1,500 - \$1,749	584	237	821
\$1,750 - \$1,999	491	175	666
\$2,000 - \$2,249	329	122	451
\$2,250 - \$2,499	292	94	386
\$2,500 - \$2,749	224	86	310
\$2,750 - \$2,999	146	52	198
\$3,000 - \$3,499	173	68	241
\$3,500 - \$3,999	133	31	164
\$4,000 - \$4,499	51	15	66
\$4,500 - \$4,999	29	10	39
\$5,000 - \$5,499	22	2	24
\$5,500 - \$5,999	9	1	10
\$6,000 - \$6,499	2	0	2
\$6,500 - \$6,999	3	0	3
\$7,000 - \$7,499	0	0	0
\$7,500 AND OVER	10	3	13
TOTAL	2,832	1,057	3,889
HIGHLY COMPENSATED EMPLOYEES (ESTIMATED)			
ANNUAL SALARY OF \$80,000 AND OVER	12	3	15

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
MEMBERS WITH SERVICE IN ANOTHER SYSTEM
JUNE 30, 1999

MEMBERS CURRENTLY ACTIVE IN KERS NONHAZARDOUS

<u>SERVICE IN</u>	<u>ACTIVE IN OTHER SYSTEM</u>	<u>INACTIVE IN OTHER SYSTEM</u>	<u>TOTAL</u>
KERS - HAZARDOUS	0	268	268
CERS - NONHAZARDOUS	566	1,890	2,456
CERS - HAZARDOUS	17	49	66
STATE POLICE	1	12	13
TOTAL - ALL SYSTEMS	584	2,219	2,803

MEMBERS CURRENTLY NOT ACTIVE IN KERS NONHAZARDOUS

<u>SERVICE IN</u>	<u>ACTIVE IN OTHER SYSTEM</u>	<u>INACTIVE IN OTHER SYSTEM</u>	<u>TOTAL</u>
KERS - HAZARDOUS	1,742	35	1,777
CERS - NONHAZARDOUS	1,696	160	1,856
CERS - HAZARDOUS	202	23	225
STATE POLICE	105	8	113
TOTAL - ALL SYSTEMS	3,745	226	3,971

NOTE: DOES NOT INCLUDE INDIVIDUALS IN PAY STATUS IN OTHER SYSTEMS

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
MEMBERS WITH SERVICE IN ANOTHER SYSTEM
JUNE 30, 1999

MEMBERS CURRENTLY ACTIVE IN KERS HAZARDOUS

<u>SERVICE IN</u>	<u>ACTIVE IN OTHER SYSTEM</u>	<u>INACTIVE IN OTHER SYSTEM</u>	<u>TOTAL</u>
KERS - NONHAZARDOUS	0	1,742	1,742
CERS - NONHAZARDOUS	14	149	163
CERS - HAZARDOUS	4	15	19
STATE POLICE	0	6	6
TOTAL - ALL SYSTEMS	18	1,912	1,930

MEMBERS CURRENTLY NOT ACTIVE IN KERS HAZARDOUS

<u>SERVICE IN</u>	<u>ACTIVE IN OTHER SYSTEM</u>	<u>INACTIVE IN OTHER SYSTEM</u>	<u>TOTAL</u>
KERS - NONHAZARDOUS	268	35	303
CERS - NONHAZARDOUS	41	34	75
CERS - HAZARDOUS	58	1	59
STATE POLICE	15	2	17
TOTAL - ALL SYSTEMS	382	72	454

NOTE: DOES NOT INCLUDE INDIVIDUALS IN PAY STATUS IN OTHER SYSTEMS

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
RETIRED LIVES SUMMARY
JUNE 30, 1999

	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS
BASIC FORM	2,271	1,670,896.29	5,135	3,516,233.58	7,406	5,187,129.87
STRAIGHT LIFE (OLD PLAN)	0	0.00	0	0.00	0	0.00
JOINT & SURVIVOR						
100% TO BENEFICIARY	1,574	1,262,989.56	479	236,755.76	2,053	1,499,745.32
66-2/3% TO BENEFICIARY	625	859,137.68	130	127,588.21	755	986,725.89
50% TO BENEFICIARY	793	894,939.57	391	396,835.17	1,184	1,291,774.74
POP-UP OPTION	1,141	1,287,360.36	524	502,271.02	1,665	1,789,631.38
10 YEARS CERTAIN	0	0.00	0	0.00	0	0.00
10 YEARS CERTAIN & LIFE	1,085	755,532.25	1,293	863,431.52	2,378	1,618,963.77
SOCIAL SECURITY OPTION						
OPTION C	337	507,056.50	767	963,380.45	1,104	1,470,436.95
OPTION D	698	988,487.95	366	438,076.04	1,064	1,426,563.99
OPTION E	0	0.00	0	0.00	0	0.00
OPTION F	0	0.00	0	0.00	0	0.00
DEPENDENT CHILD	0	0.00	0	0.00	0	0.00
REFUND	0	0.00	0	0.00	0	0.00
15 YEARS CERTAIN & LIFE	315	272,912.86	201	145,044.36	516	417,957.22
20 YEARS CERTAIN & LIFE	185	181,959.06	149	126,115.66	334	308,074.72
5 YEARS ONLY	0	0.00	0	0.00	0	0.00
TOTAL	9,024	8,681,272.08	9,435	7,315,731.77	18,459	15,997,003.85

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
RETIRED LIVES SUMMARY
JUNE 30, 1999

	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS
BASIC FORM	109	59,480.10	62	20,762.63	171	80,242.73
STRAIGHT LIFE (OLD PLAN)	0	0.00	0	0.00	0	0.00
JOINT & SURVIVOR						
100% TO BENEFICIARY	80	45,859.46	2	258.21	82	46,117.67
66-2/3% TO BENEFICIARY	25	17,157.03	1	207.08	26	17,364.11
50% TO BENEFICIARY	43	33,643.27	3	1,140.85	46	34,784.12
POP-UP OPTION	110	72,478.70	13	5,365.08	123	77,843.78
10 YEARS CERTAIN	10	9,230.29	3	1,896.87	13	11,127.16
10 YEARS CERTAIN & LIFE	45	23,368.86	17	5,796.99	62	29,165.85
SOCIAL SECURITY OPTION						
OPTION C	24	11,943.76	15	7,599.89	39	19,543.65
OPTION D	60	59,525.38	6	2,087.91	66	61,613.29
OPTION E	0	0.00	0	0.00	0	0.00
OPTION F	0	0.00	0	0.00	0	0.00
DEPENDENT CHILD	6	1,455.63	9	1,801.26	15	3,256.89
REFUND	0	0.00	0	0.00	0	0.00
15 YEARS CERTAIN & LIFE	15	9,069.51	4	2,884.14	19	11,953.65
20 YEARS CERTAIN & LIFE	16	10,991.53	0	0.00	16	10,991.53
5 YEARS ONLY	0	0.00	0	0.00	0	0.00
TOTAL	543	354,203.52	135	49,800.91	678	404,004.43

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
BENEFICIARY SUMMARY
JUNE 30, 1999

	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS
BASIC FORM	0	0.00	0	0.00	0	0.00
STRAIGHT LIFE (OLD PLAN)	0	0.00	0	0.00	0	0.00
JOINT & SURVIVOR						
100% TO BENEFICIARY	219	106,234.44	1,629	819,289.43	1,848	925,523.87
66-2/3% TO BENEFICIARY	13	5,649.23	232	106,922.54	245	112,571.77
50% TO BENEFICIARY	44	17,751.06	483	166,239.35	527	183,990.41
POP-UP OPTION	21	17,337.03	110	81,655.37	131	98,992.40
10 YEARS CERTAIN	73	59,190.07	71	55,081.72	144	114,271.79
10 YEARS CERTAIN & LIFE	57	38,431.22	80	60,039.09	137	98,470.31
SOCIAL SECURITY OPTION						
OPTION C	0	0.00	1	357.21	1	357.21
OPTION D	17	15,351.90	97	107,175.95	114	122,527.85
OPTION E	0	0.00	0	0.00	0	0.00
OPTION F	0	0.00	17	6,723.94	17	6,723.94
DEPENDENT CHILD	0	0.00	0	0.00	0	0.00
REFUND	0	0.00	0	0.00	0	0.00
15 YEARS CERTAIN & LIFE	29	22,972.53	100	67,526.64	129	90,499.17
20 YEARS CERTAIN & LIFE	24	20,529.57	37	31,693.98	61	52,223.55
5 YEARS ONLY	79	64,023.89	49	61,048.82	128	125,072.71
TOTAL	576	367,470.94	2,906	1,563,754.04	3,482	1,931,224.98

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
BENEFICIARY SUMMARY
JUNE 30, 1999

	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS
BASIC FORM	0	0.00	0	0.00	0	0.00
STRAIGHT LIFE (OLD PLAN)	0	0.00	0	0.00	0	0.00
JOINT & SURVIVOR						
100% TO BENEFICIARY	5	1,567.08	43	27,302.60	48	28,869.68
66-2/3% TO BENEFICIARY	0	0.00	4	2,200.26	4	2,200.26
50% TO BENEFICIARY	0	0.00	5	855.09	5	855.09
POP-UP OPTION	0	0.00	5	2,382.94	5	2,382.94
10 YEARS CERTAIN	5	2,835.77	4	1,111.77	9	3,947.54
10 YEARS CERTAIN & LIFE	2	1,975.01	8	944.13	10	2,919.14
SOCIAL SECURITY OPTION						
OPTION C	0	0.00	0	0.00	0	0.00
OPTION D	1	16.75	5	3,941.47	6	3,958.22
OPTION E	0	0.00	0	0.00	0	0.00
OPTION F	0	0.00	0	0.00	0	0.00
DEPENDENT CHILD	0	0.00	0	0.00	0	0.00
REFUND	0	0.00	0	0.00	0	0.00
15 YEARS CERTAIN & LIFE	1	158.25	0	0.00	1	158.25
20 YEARS CERTAIN & LIFE	0	0.00	3	517.26	3	517.26
5 YEARS ONLY	10	3,046.81	1	469.60	11	3,516.41
TOTAL	24	9,599.67	78	39,725.12	102	49,324.79

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
VESTED RETIREMENT SUMMARY
JUNE 30, 1999

AGE NEAREST BIRTHDAY	MALE LIVES		FEMALE LIVES		TOTAL	
	MONTHLY		MONTHLY		MONTHLY	
	NUMBER	BENEFITS	NUMBER	BENEFITS	NUMBER	BENEFITS
15-19	0	0.00	0	0.00	0	0.00
20-24	0	0.00	6	735.22	6	735.22
25-29	18	2,511.74	55	8,621.65	73	11,133.39
30-34	90	21,090.88	224	49,775.14	314	70,866.02
35-39	146	42,497.00	277	74,378.74	423	116,875.74
40-44	174	64,262.16	346	111,509.83	520	175,771.99
45-49	214	92,121.00	405	155,769.84	619	247,890.84
50-54	241	127,216.32	333	114,800.54	574	242,016.86
55-59	100	47,388.72	181	56,137.84	281	103,526.56
60-64	51	24,703.00	69	22,011.59	120	46,714.59
65-69	12	3,352.99	23	4,381.12	35	7,734.11
70-74	4	3,419.41	4	664.16	8	4,083.57
75-79	1	114.18	4	2,484.85	5	2,599.03
80-84	0	0.00	0	0.00	0	0.00
85 +	0	0.00	0	0.00	0	0.00
TOTAL	1,051	428,677.40	1,927	601,270.52	2,978	1,029,947.92

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
VESTED RETIREMENT SUMMARY
JUNE 30, 1999

AGE NEAREST BIRTHDAY	MALE LIVES		FEMALE LIVES		TOTAL	
	MONTHLY		MONTHLY		MONTHLY	
	NUMBER	BENEFITS	NUMBER	BENEFITS	NUMBER	BENEFITS
15-19	0	0.00	0	0.00	0	0.00
20-24	0	0.00	0	0.00	0	0.00
25-29	4	524.58	2	573.74	6	1,098.32
30-34	14	2,957.16	3	604.17	17	3,561.33
35-39	13	2,756.56	9	2,412.85	22	5,169.41
40-44	11	2,856.04	3	894.84	14	3,750.88
45-49	9	2,691.95	8	1,730.80	17	4,422.75
50-54	10	2,192.44	4	589.19	14	2,781.63
55-59	3	328.75	0	0.00	3	328.75
60-64	0	0.00	2	326.79	2	326.79
65-69	0	0.00	1	11.58	1	11.58
70-74	0	0.00	0	0.00	0	0.00
75-79	0	0.00	0	0.00	0	0.00
80-84	0	0.00	0	0.00	0	0.00
85 +	0	0.00	0	0.00	0	0.00
TOTAL	64	14,307.48	32	7,143.96	96	21,451.44

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
VESTED MEMBERSHIP SUMMARY
JUNE 30, 1999

AGE NEAREST BIRTHDAY	MALE LIVES		FEMALE LIVES		TOTAL	
	ACCUMULATED		ACCUMULATED		ACCUMULATED	
	NUMBER	CONTRIBUTIONS	NUMBER	CONTRIBUTIONS	NUMBER	CONTRIBUTIONS
15-19	768	107,676.73	53	9,614.70	821	117,291.43
20-24	289	186,341.95	298	131,443.39	587	317,785.34
25-29	591	377,153.74	1,082	901,945.83	1,673	1,279,099.57
30-34	615	506,466.33	978	1,139,777.02	1,593	1,646,243.35
35-39	557	559,010.33	892	965,683.14	1,449	1,524,693.47
40-44	562	563,757.98	834	826,648.67	1,396	1,390,406.65
45-49	591	667,234.76	798	1,317,211.13	1,389	1,984,445.89
50-54	540	729,269.63	663	1,097,136.74	1,203	1,826,406.37
55-59	283	531,267.09	338	506,413.14	621	1,037,680.23
60-64	207	364,980.27	202	241,450.22	409	606,430.49
65-69	104	82,371.90	79	88,605.13	183	170,977.03
70-74	59	33,205.09	50	45,239.82	109	78,444.91
75-79	31	14,281.57	20	19,457.46	51	33,739.03
80-84	11	1,262.35	5	3,188.31	16	4,450.66
85 +	9	907.70	3	925.65	12	1,833.35
TOTAL	5,217	4,725,187.42	6,295	7,294,740.35	11,512	12,019,927.77

KENTUCKY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
VESTED MEMBERSHIP SUMMARY
JUNE 30, 1999

AGE NEAREST BIRTHDAY	MALE LIVES		FEMALE LIVES		TOTAL	
	ACCUMULATED		ACCUMULATED		ACCUMULATED	
	NUMBER	CONTRIBUTIONS	NUMBER	CONTRIBUTIONS	NUMBER	CONTRIBUTIONS
15-19	56	6,780.16	0	0.00	56	6,780.16
20-24	18	10,275.45	8	5,445.97	26	15,721.42
25-29	88	78,992.37	19	17,627.89	107	96,620.26
30-34	71	68,173.32	33	21,919.56	104	90,092.88
35-39	37	33,049.57	28	26,354.80	65	59,404.37
40-44	32	34,850.77	12	18,491.15	44	53,341.92
45-49	37	58,341.61	16	28,984.97	53	87,326.58
50-54	22	23,948.81	9	13,771.40	31	37,720.21
55-59	14	16,858.98	6	16,411.89	20	33,270.87
60-64	6	7,295.42	2	2,924.29	8	10,219.71
65-69	2	5,066.93	0	0.00	2	5,066.93
70-74	0	0.00	0	0.00	0	0.00
75-79	0	0.00	0	0.00	0	0.00
80-84	0	0.00	0	0.00	0	0.00
85 +	0	0.00	0	0.00	0	0.00
TOTAL	383	343,633.39	133	151,931.92	516	495,565.31

SECTION VI

SUMMARY OF PRINCIPAL PLAN PROVISIONS

Effective Date

The state of Kentucky established the Kentucky Employees Retirement System in July, 1956. The plan benefits have been improved several times, most recently as of August 1, 1998.

Plan Year

A plan year is a twelve month period beginning on July 1.

Final Compensation

Final compensation is the average salary during the five highest paid fiscal years for nonhazardous positions. If the months of service credit during the highest five year period is less than forty-eight, one or more additional fiscal years shall be used. For hazardous positions, final compensation is the average salary during the three highest paid fiscal years.

Service

Service means the sum of prior service and current service as defined below:

- (a) Prior service is credited for regular full-time employment of at least 100 hours of work per month with a participating agency before July 1, 1956. In some instances prior service credit is granted for time spent in the military.
- (b) Current service is obtained for regular full-time employment which averages at least 100 hours of work per month with participating agencies after July 1, 1956. Current service credit may be granted for military service and educational leaves if special criteria are met.
- (c) Service is increased by unused sick leave, up to a maximum of six months, for purposes of computing eligibility and the amount of benefits.

Eligibility

Any state department, board, or agency shall participate in the System when directed to do so by the Executive Order of the Governor. Membership in the system consists of:

- (a) all persons who become employees of a department after such department first participates,
- (b) all persons who are employees on the date a department first participates and who elect within thirty days to become members and make contributions,
- (c) all persons who are employees of any credit union whose membership is limited to state government employees,

- (d) all persons who were professional staff employees of the Council on Public Higher Education or the Higher Education Assistance Authority and were making contributions to the system on the effective date of their respective Executive Order and filed a written election to continue in the System,
- (e) all persons who were professional staff employees of the Kentucky Authority for Educational Television on or after July 1, 1974,
- (f) members of the General Assembly and Constitutional officers of the General Assembly serving during the January, 1960 session or thereafter, and
- (g) officers and employees of the General Assembly and their assistants if employed by the General Assembly during the January, 1960 session and thereafter, but only after serving during six sessions of the General Assembly.

Normal Retirement Date

A member may elect to retire upon: (1) attaining age 65 for non-hazardous positions, or attaining age 55 for hazardous positions, and (2) having contributed to the System. Upon completion of 27 years of service credit, 15 of which are current service for non-hazardous positions, or completion of 20 years of service credit for hazardous positions, a member may elect to retire with an unreduced benefit.

Early Retirement Date

A member may elect to retire before the normal retirement date at any time after: (1) for non-hazardous positions, attainment of age 55 and completion of 60 months of service credit at least 12 of which are current, or at any age after 25 years of service, or (2) for hazardous positions, attainment of age 50 and completion of 15 years of service credit.

Normal Retirement Benefits

For non-hazardous positions, upon attainment of age 65 and completion of 48 months of service, of which 12 months are current service, a monthly benefit equal to 1.97% of the member's final compensation multiplied by his service will be payable. However, effective February 1, 1999, a member who was participating as of January 1, 1998 and continues to participate through January 1, 1999 shall receive a benefit based on a 2.00% formula rate. In addition, any such member whose effective date of retirement is between February 1, 1999 and January 31, 2009, and who has at least 20 years of service credit, shall receive a retirement allowance based on a 2.20% benefit formula rate. For hazardous positions, a monthly benefit equal to 2.49% of the member's final compensation multiplied by his service will be payable upon attainment of age 55 and completion of 60 months of service of which 12 months are current service. A member, with less than 48 months for non-hazardous positions or 60 months for hazardous positions, who retires on or after the normal retirement date is entitled to a retirement allowance which pays the actuarial equivalent of twice the member's accumulated contributions for life.

Early Retirement Benefits

A member who elects early retirement is entitled to a monthly benefit reduced for each month by which the early retirement date precedes the first date on which the member would qualify for an unreduced benefit. If a non-hazardous position employee has 27 or more years of service credit, 15 of which are current, or a hazardous position employee has 20 or more years of service credit, an unreduced benefit is payable.

Minimum Benefit

The normal retirement benefit for members with 10 or more years of service, at least one of which is current service, shall not be less than \$512 per year.

Disability Benefits

A member with 60 months of service, 12 of which must be current service, is entitled to a retirement allowance computed in the same manner as the normal retirement benefit with service and final compensation determined as of the disability date. Service credit shall be added on to total service for the period from the last day of paid employment to the 65th birthday (55th for members in a hazardous position) up to a maximum of service credited to the last day of paid employment. Except for members with 25 or more (20 or more for hazardous) years of service on the last day of paid employment, the maximum combined service credit (total service and added service) shall not exceed 25 years (20 years for hazardous members). For non-hazardous position employees with 25 or more years of service credit, additional years of service credit will be added up to a maximum combined limit of 30, or actual service if greater. For hazardous position employees with 20 or more years of service credit, actual service will be used.

A member in a hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than 25% of the member's final monthly rate of pay plus 10% of his final monthly rate of pay for each dependent child. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay. A partial disability benefit may be payable to hazardous employees if the disability is not total and permanent. The disability will be reduced to a rate determined by the Board.

Death Benefits

If a member dies prior to retirement, but after 60 months of service, 12 of which are current and who is a contributing member, or after 12 years of service, one of which is current and who is not a contributing member, or after 48 months service if the member is age 65 or over, a benefit will be payable to the beneficiary based on the member's age, years of service and final compensation at the date of death. The benefit will be equal to the amount payable had the employee retired and elected a joint and 100% survivorship payment form.

If a member in a hazardous position dies in the line of duty and has a spouse as beneficiary, a \$5,000 lump sum payment will be made and a benefit of 25% of the member's final monthly rate of pay will be payable until death or remarriage. If the member in a hazardous position dies in the line of duty and has a dependent as beneficiary, a lump sum payment of \$10,000 will be made. Monthly payments shall be made for each dependent child equal to 10% of the member's final monthly rate of pay, but not greater than 40% of the member's final monthly rate of pay. The beneficiary of a hazardous duty

member with 5 or more years of service, one of which is current, may elect a death benefit computed in the same manner as a non-hazardous employee using 2.49% rather than 1.97%.

Upon the death of a retired member, who had a minimum of 48 months of service credit, a death benefit of \$5,000 is payable.

Optional Forms of Payment

Joint and survivor annuities which provide a reduced benefit for the life of the member, with the benefit at the same or at a further reduced rate continuing after the member's death until the death of the designated beneficiary may be elected by the member prior to retirement. Other optional forms include a life annuity with 10, 15 or 20 years of payments guaranteed and a Social Security adjustment with or without survivor rights.

Contributions

Members contribute 5% of gross compensation (7% for hazardous positions). On each June 30, interest is credited at the rate to be determined by the Board on the accumulated contributions the member had in his account on the previous June 30. Upon termination a member may withdraw the contributions with interest, but will be entitled to no benefit payments.

Medical Insurance

Recipients of a retirement benefit may elect to participate in a voluntary hospital/medical group insurance plan for themselves as well as any beneficiaries or dependents. The cost of participation for any beneficiaries or dependents is borne by the retiree (except that dependents of hazardous position employees and legislators will have the same percentage paid by the system as the member). The retirement system will pay a portion of the cost of participation for the retiree based on years of service credit as follows:

Less than 4 years	0%
4 - 9 years	25%
10 - 14 years	50%
15 - 19 years	75%
20 or more years	100%

If a hazardous member is disabled in the line of duty, the retirement system will pay 100% of the cost of the member, spouse and eligible dependents. If a hazardous member is killed in the line of duty, the retirement system will pay 100% of the cost of the beneficiary and eligible dependents as long as they remain eligible for a monthly benefit payment.

Increase in Retirement Allowances

Effective August 1, 1996, and on July 1 of each year thereafter, a recipient of a retirement allowance shall have his retirement allowance increased by the percentage increase in the annual average of the consumer price index for all urban consumers for the most recent calendar year as published by the federal Bureau of Labor Statistics, not to exceed five percent (5%). In determining the annual employer contribution rate, only the cost of increases granted as of the most recent valuation date shall be recognized. The benefits of this subsection as provided on August 1, 1996 and thereafter shall not be considered as benefits protected by the inviolable contract provisions of KRS 61.692, 16.652, and 78.852. The General Assembly reserves the right to suspend or reduce the benefits conferred in this subsection if in their judgment the welfare of the Commonwealth so demands.

FORTIETH ANNUAL ACTUARIAL VALUATION

JUNE 30, 1999

COUNTY EMPLOYEES RETIREMENT SYSTEM

FRANKFORT, KENTUCKY

SECTION I

INTRODUCTION

The results of the fortieth annual actuarial valuation of the County Employees Retirement System are presented in this report. The actuarial valuation was made on the basis of the data provided by the System as of June 30, 1999.

The purpose of the actuarial valuation is to determine the actuarial condition of the Retirement System and the rate of employer contribution for the ensuing fiscal year as required to support the System.

The plan provisions utilized in this valuation are described in the Summary of Principal Plan Provisions in Section VI. The basis of funding is defined in KRS 61.565 and provides that the actuarial valuation method would be uniform for all benefits provided by the System. The Entry Age Normal Actuarial cost method has been used for all benefits. KRS 61.565 provides that each employer participating in the System shall contribute an amount equal to the Normal Cost contribution rate, and an amount sufficient to amortize the Unfunded Actuarial Accrued Liability over 30 years using the level-percentage-of-payroll method. This is the standard used herein to determine whether the funding of the System is adequate.

The actuarial valuation results are based upon the employee census and asset data supplied by the office of the System, and upon the actuarial assumptions as stated in Section II.

SECTION II

ACTUARIAL CONSIDERATIONS

Description of Actuarial Methods

The actuarial valuation is the means by which the contingent liabilities and contribution rates of a retirement system are evaluated and determined. It provides a guide to the System to the financing required during years of active service to accumulate the funds needed to provide members' benefits. It also makes it possible to estimate beforehand the cost of proposed changes in the System so that action can be taken in the light of the cost consequences.

The methods of valuation are prescribed by KRS 61.565. The Entry Age Normal Cost Method was used to determine costs of all benefits with the exception of the retiree medical insurance benefit. Under this method the employer's contribution to the retirement system consists of Normal Cost, a payment to fund the Unfunded Actuarial Accrued Liability, medical insurance, and administrative expenses. The Normal Cost represents the contribution (as a level percent of payroll) that completely funds benefits at retirement if made from a person's entry into employment until his retirement. The Actuarial Accrued Liability represents the sum of money and investments that would be held in the fund if the retirement system had been in effect since the date each member was first employed. The payment to fund the Unfunded Actuarial Accrued Liability is the amount necessary to amortize this liability over 30 years using the "level-percentage-of-payroll" method. Under the "level-percentage-of-payroll" method, the amortization payment is an amount which remains constant as a percentage of payroll over the 30 years. The initial 30 year period began with the 1990 valuation. In each subsequent valuation, any change in Unfunded Actuarial Accrued Liability is identified and established as a separate amortization base with a 30 year funding period beginning with that valuation. The change in Unfunded Actuarial Accrued Liability established as a separate base in each valuation will include changes attributable to experience gains and/or losses over the prior year, as well as changes attributable to benefit improvements and revisions in actuarial assumptions and funding methods.

The medical insurance contribution rate was originally determined in the 1987 valuation as the level percent of payroll necessary to fund projected medical insurance premiums over the next sixteen years (taking into account the level of reserves in the Insurance Fund). Beginning in 1988, this rate was increased each year by a percentage amount needed to reach the Entry Age Normal funding rate within a 20 year period measured from 1987. This was continued through the 1992 valuation. In the 1992 valuation, an acceleration of the scheduled increases in the medical insurance contribution rate was recommended where possible. This acceleration in these rates was coupled with a deferral of future increases until the time of the next experience study, unless there was a deterioration in the funded position of the medical premium benefit in which case the rate levels were to be reviewed to redetermine an appropriate current funding level, or unless recommended contributions are not made in the prior year, in which case the shortfall would be spread over future years through an increase in the contribution rate. This continued through the 1995 valuation. Effective with the 1996 valuation, a new

medical insurance funding policy was adopted by the Board. Under this revised policy, the medical insurance contribution rate for the 1996 valuation was set equal to the 1995 rate plus any reduction in the retirement and administrative expense rates between the 1995 and 1996 valuations (but in no event to be less than the 1995 medical insurance contribution rate). Beginning with the 1997 valuation, the medical insurance contribution rate is to be increased each year by the percentage amount necessary to raise this medical insurance rate to the full Entry Age Normal Cost Method contribution rate by the year 2016.

In computing the full Entry Age Normal Cost Method contribution rate, liabilities are to be developed based on actuarial assumptions in use in the current valuation (as adjusted from time to time due to experience studies) and actuarial value of assets based on the same 5-year market to book value average method as employed for the retirement benefit valuation. The actuarial value of assets for the medical contribution rate valuation utilized book value prior to the 1996 valuation.

The amount of the administrative expense was based on the budgeted amount for the twelve months following the date of the valuation as allocated between Hazardous position and Non-Hazardous position employees.

Actuarial Assumptions

Since the actuarial valuation involves estimates of benefits payable in the future, it is necessary that assumptions be made as to the interest earnings, rates of mortality, withdrawal, retirement, and disability, and the rate at which salaries will increase. In addition, an assumption must be made relative to increases in medical insurance premium rates in order to value the liability for the medical insurance benefit.

It is desirable that the actuarial assumptions be reviewed periodically to see whether past experience and probable future experience justifies the continued use of these actuarial assumptions. Such a study was performed subsequent to the 1995 actuarial valuation and new actuarial assumptions were adopted by the Board for use in the 1996 and subsequent actuarial valuations, until such time as another experience study is performed. This valuation reflects assumptions based on the 1995 experience study. Actuarial assumptions used for hazardous position employees are similar to actuarial assumptions adopted for the State Police Retirement System (with the exception of the rate of retirement). The actuarial assumptions as used in this valuation are described later in this section.

Actuarial Value of Assets

The actuarial value of assets is determined in the following manner for the Retirement Fund:

1. Determine the ratio of the market value of Retirement Fund assets to book value as of the current valuation date and the four preceding valuation dates (but not using any valuation dates prior to June 30, 1989). All asset values include accrued investment income and member and employer contribution receivables, and exclude member refunds and investment expenses payable.

2. Determine the average ratio of market to book value as of these valuation dates.
3. Apply this average ratio to the book value (as adjusted for accrued investment income and member and employer contribution receivables, and member refunds and investment expenses payable) as of the current valuation date to derive valuation assets.

For the Insurance Fund, the revision in the asset valuation method was deferred until the 1996 valuation. Prior to that time, the actuarial value of assets continued to be determined based on the book value of the assets in that fund as of the valuation date adjusted for any receivables and/or payables.

The different asset valuation methods for the Retirement Fund and the Insurance Fund for the 1990 through 1995 valuations were a result of the following:

1. There was separate book and market value information for the Insurance Fund under all systems dating only from July, 1992. So it was not possible to use the same averaging method for the Insurance Fund as used for the Retirement Fund until sufficient years of separate information were developed.
2. The magnitude of assets to liabilities for the Insurance Fund was such that the method of valuing assets would only negligibly affect valuation results. Also, given the method then in use for transitioning into higher medical premium contribution rates over future years, the asset valuation method used for the Insurance Fund was not as critical as the asset valuation method used for the Retirement Fund.

However, effective with the 1996 valuation, there was now sufficient historical information to allow use of the same asset valuation method for the Insurance Fund as that used for the Retirement Fund since 1990. Accordingly, the Board adopted this change in asset valuation method for the Insurance Fund effective with the 1996 valuation.

The tables below show derivation of valuation assets for the Retirement Fund and the Insurance Fund as of the current valuation:

RETIREMENT FUND - NON HAZARDOUS			
Valuation Date	Book Value	Market Value	Ratio
June 30, 1999	2,912,561,404	4,473,414,987	153.59041%
June 30, 1998	2,549,766,552	3,836,504,397	150.46493%
June 30, 1997	2,208,753,716	3,129,205,948	141.67292%
June 30, 1996	1,873,025,147	2,451,945,479	130.90831%
June 30, 1995	1,643,982,397	2,012,950,197	122.44354%
Average Ratio			139.81602%
Valuation Assets (Average Ratio x Current Book Value)			4,072,227,435

RETIREMENT FUND - HAZARDOUS			
Valuation Date	Book Value	Market Value	Ratio
June 30, 1999	815,416,101	1,226,158,404	150.37211%
June 30, 1998	713,906,170	1,056,575,584	147.99922%
June 30, 1997	619,129,467	870,120,108	140.53928%
June 30, 1996	540,588,422	699,728,607	129.43833%
June 30, 1995	478,924,330	580,787,809	121.26922%
Average Ratio			137.92363%
Valuation Assets (Average Ratio x Current Book Value)			1,124,651,486

INSURANCE FUND - NON HAZARDOUS			
Valuation Date	Book Value	Market Value	Ratio
June 30, 1999	189,137,708	257,303,467	130.04028%
June 30, 1998	146,759,866	200,484,451	136.60714%
June 30, 1997	124,158,293	153,939,629	123.98659%
June 30, 1996	104,059,383	114,607,048	110.13620%
June 30, 1995	82,813,551	88,091,626	106.37344%
Average Ratio			122.62873%
Valuation Assets (Average Ratio x Current Book Value)			231,937,169

INSURANCE FUND – HAZARDOUS			
Valuation Date	Book Value	Market Value	Ratio
June 30, 1999	91,558,368	132,042,032	144.21624%
June 30, 1998	75,057,569	103,504,286	137.89986%
June 30, 1997	63,768,122	79,692,172	124.97180%
June 30, 1996	53,521,190	59,462,507	111.10087%
June 30, 1995	42,640,388	45,875,990	107.58812%
Average Ratio			125.15538%
Valuation Assets (Average Ratio x Current Book Value)			114,590,223

Note: Book and market values reflect accrued investment income and member and employer contribution receivables, member refunds and investment expenses payable.

A. STATEMENT OF ACTUARIAL ASSUMPTIONS

(1) Mortality:

- (a) Active & retired lives - 1983 Group Annuity Mortality Table, plus a pre-retirement duty death rate of .0005 per year for hazardous duty employees.
- (b) Disabled lives - Social Security Administration Disability Mortality Rates - Actuarial Study No. 75 (current rates used by PBGC for disabled lives receiving Social Security).

- (2) Disablement - Graduated rates based on 1995 experience study.

- (3) Termination of employment - Graduated select (non-hazardous only) and ultimate rates based on 1995 experience study.

- (4) Retirement - Non-Hazardous:

<u>Age</u>	<u>Retirement Rate</u>
55-57	03
58-59	04
60-61	05
62	25
63-64	10
65	50
66-67	20
68	25
69	40
70 and Over	1.00

At age 55-64 in lieu of the age related rate, 20% are assumed to retire as soon as eligible for unreduced benefits.

Hazardous: Assumed that 50% will retire as soon as eligible for unreduced benefits and balance will continue to age 55.

- (5) Marital status
 - (a) Percentage married - 100%.
 - (b) Age difference - Males are assumed to be 3 years older than their spouses.
- (6) Dependent children - For hazardous position employees under duty related death benefits, it is assumed that the employee is survived by 2 dependent children each age 6.
- (7) Investment return - 8.25% per year, net of investment related expenses, compounded annually.
- (8) Compensation progression - 6.50% per year, compounded annually.
- (9) Underlying Inflation Rate - 3.5% per year; reflected in investment return and compensation progression assumptions.
- (10) Retiree Medical Insurance - It was assumed that future retirees would select medical coverage in the same proportion that current retirees have selected coverage. Monthly premium rates were assumed to be as follows:

<u>Plan Type</u>	<u>Rate in Effect on Valuation Date</u>
Single	\$203.00
Family	450.00
Parent Plus	260.00
Couple	456.00
Medicare	96.90
High Option	176.62

In determining the target Entry Age Funding rate in valuations beginning with 1996, it was assumed that medical premiums would grow at the following annual rates:

<u>Years</u>	<u>Medical Increase</u>
1996 - 2005	10%
2006 - 2010	9%
2011 - 2015	8%
Thereafter	7.5%

The assumed rate of growth in number of retirees receiving medical insurance

was based on assumed retirement and mortality patterns used throughout the valuation.

(11) Missing data

- For those active members with incomplete data, the following assumptions were made:
 - . If reported salary was zero or blank, then monthly salary was assumed to be \$926
 - . If reported age was blank, then assume current age equal to age 18 plus years of service reported

(12) Members with Multiple Service Records

- For active members with service in more than one system, the liability has been valued as follows:
 - . Service under all systems is aggregated for purposes of determining benefit eligibility.
 - . Future service is projected only under the system in which the member is currently active.
 - . The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
 - . The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

B. SAMPLE RATES FOR NON-HAZARDOUS POSITION EMPLOYEES***(1) Annual Rates of Mortality:**

<u>Age</u>	<u>Active Mortality</u>		<u>Disabled Mortality</u>	
	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>
25	0.05%	0.03%	4.83%	2.63%
30	0.06%	0.03%	3.62%	2.37%
40	0.12%	0.07%	2.82%	2.09%
50	0.40%	0.16%	3.83%	2.57%
55	0.61%	0.25%	4.82%	2.95%
60	0.92%	0.42%	6.03%	3.31%

(2) Annual Rates of Decrement:

<u>Age</u>	<u>Disablement</u>	<u>Ultimate Termination</u>
25	0.033%	2.40%
30	0.039%	2.40%
40	0.105%	2.00%
50	0.423%	1.60%
55	0.794%	1.20%
60	1.395%	0.20%

(3) Select Rates of Termination:

<u>Years of Service</u>	<u>Select Termination</u>
1	25.0%
2	8.0%
3	5.0%
4	4.0%
5	3.5%

(4) Compensation Progression:

<u>Age</u>	<u>Rate of Annual Increase</u>	<u>Compensation at Normal Retirement as Percentage Of Current Annual Compensation</u>
25	6.50%	1,241.6%
30	6.50%	906.2%
40	6.50%	482.8%
50	6.50%	257.2%
55	6.50%	187.7%
60	6.50%	137.0%

*Sample rates for hazardous position employees are included in the State Police Retirement System valuation.

SECTION III

RESULTS OF THE 1999 ACTUARIAL VALUATION

Determination of Contribution Rate

The rate of contribution by the participating Agencies required to provide 30 year amortization of the Unfunded Actuarial Accrued Liability under the level-percentage-of-payroll method, the employer share of the annual Normal Cost, medical insurance and the administrative costs of the System is shown in Table I. The required contribution is expressed both in dollars and as a percentage of the estimated payroll of the participating Agencies as of June 30, 1999.

The actuarial methods applied to determine the Normal Cost for the year commencing July 1, 1999 are described in Section II. These costs are classified by type of benefit. The Normal Cost contribution rate of the participating Agencies is determined by reducing the total Normal Cost by the expected employee contributions. A breakdown of actuarial liabilities and costs between Hazardous and Non-Hazardous position employees appears in Table II for the Retirement Fund and Table IV for the Insurance Fund. A breakdown of the total Unfunded Actuarial Accrued Liability into the amortization amounts by year is shown in Table III for the Retirement Fund and Table V for the Insurance Fund. Table VI has been included to show an estimate of projected payouts from the funds over the next 10 years based on current plan provisions and actuarial assumptions.

Actuarial Balance Sheet

Table VII is the actuarial balance sheet of the County Employees Retirement System as of June 30, 1999 for the Retirement Fund. Table VIII is the actuarial balance sheet for the Insurance Fund. The "actuarial balance sheet" displays the fundamental relationship between actual assets, future contributions, and future benefits. The asset side of the balance sheet is comprised of actual fund assets plus the actuarial present value of future contributions on behalf of current members. The actuarial present values of all projected benefit payments to present active and inactive members make up the balance sheet liabilities.

Accountant's Information

Table IX contains additional information needed to comply with GASB disclosure requirements relative to the Retirement Fund.

Table X contains information needed to comply under GASB Statement No. 12 relative to the Insurance Fund.

TABLE I COUNTY EMPLOYEES RETIREMENT SYSTEM RETIREMENT AND INSURANCE FUND DETERMINATION OF CONTRIBUTION RATE - JUNE 30, 1999		
UNFUNDED ACTUARIAL ACCRUED LIABILITY - RETIREMENT FUND		
		Percent *
Total Actuarial Accrued Liability	\$ 3,955,132,659	231.28%
Assets at Actuarial Value	5,196,878,921	303.89%
Unfunded Actuarial Accrued Liability	\$(1,241,746,262)	(72.61%)
Contribution - Payment on Unfunded Actuarial Accrued Liability	\$ (61,759,269)	(3.61%)
NORMAL COST - RETIREMENT FUND		
Retirement Benefits	\$ 157,918,352	9.23%
Disability Benefits	13,713,415	0.80%
Withdrawal Benefits (Vested and Refund of Contributions)	12,229,965	0.72%
Survivor Benefits	10,305,151	0.60%
Total Normal Cost	\$ 194,166,883	11.35%
Less: Employee Contributions	91,813,539	5.37%
Normal Cost - State	\$ 102,353,344	5.98%
TOTAL ANNUAL EMPLOYER COST - RETIREMENT AND INSURANCE FUND		
Non-Hazardous Duty Cost		
Normal Cost	\$ 80,427,844	5.55% **
Payment on Unfunded Actuarial Accrued Liability	(54,712,764)	(3.77%) **
Administrative Expense	7,635,002	0.53% **
Group Hospital and Medical Insurance Premiums	58,427,647	4.03% **
Total Annual Cost	\$ 91,777,729	6.34% **
Hazardous Duty Cost		
Normal Cost	\$ 21,925,500	8.42% ***
Payment on Unfunded Actuarial Accrued Liability	(7,046,505)	(2.71%) ***
Administrative Expense	1,092,945	0.42% ***
Group Hospital and Medical Insurance Premiums	26,418,414	10.15% ***
Total Annual Cost	\$ 42,390,354	16.28% ***
Based on estimated annual salaries		
* Total	\$ 1,710,097,488	
** Non-Hazardous Position Employees	\$ 1,449,817,548	
*** Hazardous Position Employees	\$ 260,279,940	

TABLE II COUNTY EMPLOYEES RETIREMENT SYSTEM RETIREMENT FUND CLASSIFICATION OF ACTUARIAL LIABILITIES AND COSTS - JUNE 30, 1999			
	Non-Hazardous Position Employees	Hazardous Position Employees	Total
ACTUARIAL ACCRUED LIABILITY			
Active Members			
Retirement Benefits	\$ 1,582,633,634	\$ 478,538,492	\$ 2,061,172,126
Disability Benefits	104,060,611	11,296,504	115,357,115
Withdrawal Benefits (Vested and Refund of Contributions)	55,298,434	5,968,518	61,266,952
Survivor Benefits	103,969,801	12,974,469	116,944,270
Total - Actives	\$ 1,845,962,480	\$ 508,777,983	\$ 2,354,740,463
Inactive Members			
Retired Members and Beneficiaries	\$ 1,108,956,154	\$ 452,251,453	\$ 1,561,207,607
Vested Retirement	25,199,324	2,147,709	27,347,033
Vested Membership	11,302,926	534,630	11,837,556
Total - Inactives	\$ 1,145,458,404	\$ 454,933,792	\$ 1,600,392,196
Total Actuarial Accrued Liability	\$ 2,991,420,884	\$ 963,711,775	\$ 3,955,132,659
UNFUNDED ACTUARIAL ACCRUED LIABILITY			
Total Actuarial Accrued Liability	\$ 2,991,420,884	\$ 963,711,775	\$ 3,955,132,659
Less Actuarial Value of Assets	4,072,227,435	1,124,651,486	5,196,878,921
Unfunded Actuarial Accrued Liability	\$(1,080,806,551)	\$ (160,939,711)	\$(1,241,746,262)
NORMAL COST			
Retirement Benefits	\$ 121,194,526	\$ 36,723,826	\$ 157,918,352
Disability Benefits	12,150,487	1,562,928	13,713,415
Withdrawal Benefits (Vested and Refund of Contributions)	10,046,231	2,183,734	12,229,965
Survivor Benefits	8,914,710	1,390,441	10,305,151
Total Normal Cost	\$ 152,305,954	\$ 41,860,929	\$ 194,166,883
Less Employee Contributions	71,878,110	19,935,429	91,813,539
Total Normal Cost - State	\$ 80,427,844	\$ 21,925,500	\$ 102,353,344
ACCRUED BENEFIT LIABILITY *			
Total	\$ 1,976,525,815	\$ 709,431,801	\$ 2,685,957,616
* Present value of accrued benefits deferred to normal retirement date.			

TABLE III

COUNTY EMPLOYEES RETIREMENT SYSTEM

UNFUNDED ACTUARIAL ACCRUED LIABILITY - RETIREMENT FUND - JUNE 30, 1999

Date Established	Amount of Base on		Amortization Payment	Source of Base
	Date Established	Current Valuation Date		
Non-Hazardous Position Employees				
6/30/1990	\$ 93,672,421	\$ 114,048,229	\$ 7,242,519	Cumulative unfunded actuarial accrued liability set up as initial base under revised funding policy (30 year level percent of payroll method)
6/30/1991	61,472,822	73,732,562	4,530,571	Experience gains/losses for 7/1/90 to 6/30/91
6/30/1992	(125,111,651)	(147,538,448)	(8,789,456)	Experience gains/losses for 7/1/91 to 6/30/92; Asset valuation method change
6/30/1993	(28,358,370)	(32,819,115)	(1,899,045)	Experience gains/losses for 7/1/92 to 6/30/93
6/30/1994	59,026,195	66,927,041	3,767,792	Experience gains/losses for 7/1/93 to 6/30/94; Retiree COLA's
6/30/1995	(35,766,009)	(39,670,780)	(2,176,180)	Experience gains/losses for 7/1/94 to 6/30/95
6/30/1996	(188,502,047)	(204,241,639)	(10,932,238)	Experience gains/losses for 7/1/95 to 6/30/96; Revised actuarial assumptions; Correction of pension allocation for members in pay status with both non-hazardous and hazardous service in KERS
6/30/1997	(200,122,489)	(211,360,560)	(11,053,523)	Experience gains/losses for 7/1/96 to 6/30/97; 2.8% retiree COLA effective 8/1/96
6/30/1998	(311,976,854)	(320,795,764)	(16,411,270)	Experience gains/losses for 7/1/97 to 6/30/98; Increase in death benefit from \$2,500 to \$5,000; 3.0% retiree COLA effective 7/1/97
6/30/1999	(379,088,077)	(379,088,077)	(18,991,934)	Experience gains/losses for 7/1/98 to 6/30/99; 2.3% retiree COLA effective 7/1/98
Total	\$(1,054,754,059)	\$(1,080,806,551)	\$ (54,712,764)	

TABLE III (Continued)

COUNTY EMPLOYEES RETIREMENT SYSTEM

UNFUNDED ACTUARIAL ACCRUED LIABILITY - RETIREMENT FUND - JUNE 30, 1999

Date Established	Amount of Base on		Amortization Payment	Source of Base
	Date Established	Current Valuation Date		
Hazardous Position Employees				
6/30/1990	\$ 68,584,978	\$ 83,503,720	\$ 5,302,820	Cumulative unfunded actuarial accrued liability set up as initial base under revised funding policy (30 year level percent of payroll method)
6/30/1991	29,934,803	35,904,806	2,206,207	Experience gains/losses for 7/1/90 to 6/30/91
6/30/1992	(12,941,304)	(15,261,087)	(909,164)	Experience gains/losses for 7/1/91 to 6/30/92; Asset valuation method change
6/30/1993	(7,291,213)	(8,438,113)	(488,263)	Experience gains/losses for 7/1/92 to 6/30/93
6/30/1994	1,854,577	2,102,819	118,382	Experience gains/losses for 7/1/93 to 6/30/94; Retiree COLA's
6/30/1995	24,831,672	27,542,682	1,510,881	Experience gains/losses for 7/1/94 to 6/30/95
6/30/1996	(65,565,268)	(71,039,853)	(3,802,479)	Experience gains/losses for 7/1/95 to 6/30/96; Revised actuarial assumptions; Correction of pension allocation for members in pay status with both non-hazardous and hazardous service in KERS
6/30/1997	(62,908,989)	(66,441,704)	(3,474,702)	Experience gains/losses for 7/1/96 to 6/30/97; 2.8% retiree COLA effective 8/1/96
6/30/1998	(50,329,820)	(51,752,535)	(2,647,556)	Experience gains/losses for 7/1/97 to 6/30/98; Revised average salary definition from 5 years to 3 years; Increase in death benefit from \$2,500 to \$5,000; 3.0% retiree COLA effective 7/1/97
6/30/1999	(97,060,446)	(97,060,446)	(4,862,631)	Experience gains/losses for 7/1/98 to 6/30/99; 2.3% retiree COLA effective 7/1/98
Total	\$ (170,891,010)	\$ (160,939,711)	\$ (7,046,505)	

TABLE IV COUNTY EMPLOYEES RETIREMENT SYSTEM INSURANCE FUND DETERMINATION OF ENTRY AGE CONTRIBUTION RATE - JUNE 30, 1999			
	Non-Hazardous Position Employees	Hazardous Position Employees	Total
ACTUARIAL ACCRUED LIABILITY			
Active Members	\$ 930,980,799	\$ 299,541,058	\$1,230,521,857
Inactive Members			
Retired Members	\$ 312,469,284	\$ 194,102,068	\$ 506,571,352
Beneficiaries	110,270	20,952,443	21,062,713
Vested Retirement	39,313,933	3,684,546	42,998,479
Vested Membership	0	0	0
Total - Inactives	\$ 351,893,487	\$ 218,739,057	\$ 570,632,544
Total Actuarial Accrued Liability	\$1,282,874,286	\$ 518,280,115	\$1,801,154,401
UNFUNDED ACTUARIAL ACCRUED LIABILITY			
Total Actuarial Accrued Liability	\$1,282,874,286	\$ 518,280,115	\$1,801,154,401
Less Actuarial Value of Assets	231,937,169	114,590,223	346,527,392
Unfunded Actuarial Accrued Liability	\$1,050,937,117	\$ 403,689,892	\$1,454,627,009
NORMAL COST			
Gross Normal Cost	\$ 110,128,508	\$ 35,923,468	\$ 146,051,976
Less Employee Contributions	0	0	0
Net Normal Cost - State	\$ 110,128,508	\$ 35,923,468	\$ 146,051,976
Estimated Annual Salaries	\$1,449,817,548	\$ 260,279,940	\$1,710,097,488
TOTAL ANNUAL EMPLOYER COST			
Contribution Amount			
Normal Cost	\$ 110,128,508	\$ 35,923,468	\$ 146,051,976
Payment on Unfunded Actuarial Accrued Liability	56,133,893	21,546,294	77,680,187
Total Annual Cost	\$ 166,262,401	\$ 57,469,762	\$ 223,732,163
As Percent of Payroll			
Normal Cost	7.60%	13.80%	8.54%
Payment on Unfunded Actuarial Accrued Liability	3.87%	8.28%	4.54%
Total Annual Cost	11.47%	22.08%	13.08%
INSURANCE FUND SHORTFALL			
Full Entry Age Funding Level	11.47%	22.08%	13.08%
Current Funding Allocation	4.03%	10.15%	4.96%
Additional to Pick Up By 2016	7.44%	11.93%	8.12%
Expected Increase in Insurance Fund Rate in 2000 Valuation	0.24%	0.45%	N/A

TABLE V				
COUNTY EMPLOYEES RETIREMENT SYSTEM				
UNFUNDED ACTUARIAL ACCRUED LIABILITY - INSURANCE FUND - JUNE 30, 1999				
Date Established	Amount of Base on		Amortization Payment	Source of Base
	Date Established	Current Valuation Date		
Non-Hazardous Position Employees				
6/30/1996	\$ 901,011,537	\$ 976,244,426	\$ 52,254,459	Cumulative unfunded actuarial accrued liability set up as initial base under revised funding policy (30 year level percent of payroll method)
6/30/1997	29,886,573	31,564,883	1,650,749	Experience gains/losses for 7/1/96 to 6/30/97; Impact of actual insurance fund contributions vs. full entry age amounts
6/30/1998	62,468,342	64,234,187	3,286,093	Experience gains/losses for 7/1/97 to 6/30/98; Impact of actual insurance fund contributions vs. full entry age amounts
6/30/1999	(21,106,379)	(21,106,379)	(1,057,408)	Experience gains/losses for 7/1/98 to 6/30/99; Impact of actual insurance fund contributions vs. full entry age amounts
Total	\$ 972,260,073	\$1,050,937,117	\$ 56,133,893	
Hazardous Position Employees				
6/30/1996	\$ 318,111,968	\$ 344,673,762	\$ 18,449,008	Cumulative unfunded actuarial accrued liability set up as initial base under revised funding policy (30 year level percent of payroll method)
6/30/1997	53,367,623	56,364,533	2,947,696	Experience gains/losses for 7/1/96 to 6/30/97; Impact of actual insurance fund contributions vs. full entry age amounts
6/30/1998	15,379,222	15,813,959	809,011	Experience gains/losses for 7/1/97 to 6/30/98; Impact of actual insurance fund contributions vs. full entry age amounts
6/30/1999	(13,162,362)	(13,162,362)	(659,421)	Experience gains/losses for 7/1/98 to 6/30/99; Impact of actual insurance fund contributions vs. full entry age amounts
Total	\$ 373,696,451	\$ 403,689,892	\$ 21,546,294	

TABLE VI
COUNTY EMPLOYEES RETIREMENT SYSTEM
BENEFIT PAYMENT PROJECTIONS

RETIREMENT FUND PAYMENT PROJECTIONS

Plan Year	Non-Hazardous Position Employees	Hazardous Position Employees	Total
7/1/1999 to 6/30/2000	139,566,000	50,726,000	190,292,000
7/1/2000 to 6/30/2001	152,135,000	53,664,000	205,799,000
7/1/2001 to 6/30/2002	162,834,000	57,541,000	220,375,000
7/1/2002 to 6/30/2003	174,657,000	62,126,000	236,783,000
7/1/2003 to 6/30/2004	188,912,000	66,712,000	255,624,000
7/1/2004 to 6/30/2005	205,583,000	72,727,000	278,310,000
7/1/2005 to 6/30/2006	224,685,000	80,747,000	305,432,000
7/1/2006 to 6/30/2007	246,160,000	90,283,000	336,443,000
7/1/2007 to 6/30/2008	269,616,000	100,375,000	369,991,000
7/1/2008 to 6/30/2009	296,045,000	112,649,000	408,694,000

INSURANCE FUND PAYMENT PROJECTIONS

Plan Year	Non-Hazardous Position Employees	Hazardous Position Employees	Total
7/1/1999 to 6/30/2000	23,173,000	10,864,000	34,037,000
7/1/2000 to 6/30/2001	26,611,000	12,078,000	38,689,000
7/1/2001 to 6/30/2002	30,661,000	13,606,000	44,267,000
7/1/2002 to 6/30/2003	35,371,000	15,386,000	50,757,000
7/1/2003 to 6/30/2004	41,001,000	17,314,000	58,315,000
7/1/2004 to 6/30/2005	47,613,000	19,705,000	67,318,000
7/1/2005 to 6/30/2006	55,419,000	22,729,000	78,148,000
7/1/2006 to 6/30/2007	64,196,000	26,134,000	90,330,000
7/1/2007 to 6/30/2008	73,887,000	29,801,000	103,688,000
7/1/2008 to 6/30/2009	85,283,000	34,402,000	119,685,000

Projected benefit payments reflect future actual experience consistent with actuarial assumptions used in current annual valuation. Future cost-of-living adjustments of 3% per annum have been assumed in retirement benefit amounts. Insurance fund payments reflect future medical inflation rates consistent with the valuation assumption. There has not been any assumption made as to the number of future new entrants who may enter the plan. Nor has any provision been made for any change in the basic benefit structure of the plan beyond changes already legislated.

TABLE VII COUNTY EMPLOYEES RETIREMENT SYSTEM RETIREMENT FUND ACTUARIAL BALANCE SHEET -- JUNE 30, 1999		
ACTUARIAL ASSETS		
Fund Assets at Actuarial Value (Plus Refunds and Expenses Payable) *		\$ 5,206,634,968
Actuarial Present Value of Future Member Contributions		1,097,727,455
Actuarial Present Value of Future Employer Contributions		
For Normal Costs	\$ 1,153,650,248	
For Unfunded Actuarial Accrued Liability	(1,241,746,262)	
Total		\$ (88,096,014)
Total Actuarial Assets		\$ 6,216,266,409
ACTUARIAL LIABILITIES		
Actuarial Present Value of Future Benefits		
Inactive Members:		
Retired Members and Beneficiaries	\$ 1,561,207,607	
Vested Retirement	27,347,033	
Vested Membership	11,837,556	
Total - Inactive		\$ 1,600,392,196
Actuarial Present Value of Future Benefits		
Active Members:		
Retirement Benefits	\$ 3,879,916,555	
Disability Benefits	276,717,814	
Withdrawal Benefits (Vested and Refund of Contributions)	214,696,926	
Survivor Benefits	234,786,871	
Total - Active		\$ 4,606,118,166
Refunds and Expenses Payable		\$ 9,756,047
Total Actuarial Liabilities		\$ 6,216,266,409
ACCRUED BENEFIT LIABILITY **		
Total		\$ 2,685,957,616
Notes		
* Values as of June 30, 1999		
Market value of assets:	Non-Hazardous	\$ 4,473,414,987
	Hazardous	\$ 1,226,158,404
	Total	\$ 5,699,573,391
Actuarial value of assets:		\$ 5,196,878,921
Member's Contribution Account:		\$ 759,921,835
** Present value of accrued benefit deferred to normal retirement date.		

TABLE VIII
COUNTY EMPLOYEES RETIREMENT SYSTEM
INSURANCE FUND
ACTUARIAL BALANCE SHEET -- JUNE 30, 1999

ACTUARIAL ASSETS		
Fund Assets at Actuarial Value (Plus Refunds and Expenses Payable) *		\$ 346,606,761
Actuarial Present Value of Future Member Contributions (Note: All Future Member Contributions Credited Against Retirement Fund)		0
Actuarial Present Value of Future Employer Contributions		
For Normal Costs	\$ 1,779,727,224	
For Unfunded Actuarial Accrued Liability	1,454,627,009	
Total		\$ 3,234,354,233
Total Actuarial Assets		\$ 3,580,960,994
ACTUARIAL LIABILITIES		
Actuarial Present Value of Future Benefits		
Inactive Members:		
Retired Members and Beneficiaries	\$ 527,634,065	
Vested Retirement	42,998,479	
Vested Membership	0	
Total - Inactive		\$ 570,632,544
Actuarial Present Value of Future Benefits		
Active Members:		\$ 3,010,249,081
Refunds and Expenses Payable		\$ 79,369
Total Actuarial Liabilities		\$ 3,580,960,994
Notes		
* Values as of June 30, 1999		
Market value of assets:	Non-Hazardous	\$ 257,303,467
	Hazardous	\$ 132,042,032
	Total	\$ 389,345,499
Actuarial value of assets:		\$ 346,527,392

TABLE IX COUNTY EMPLOYEES RETIREMENT SYSTEM ACCOUNTANT'S INFORMATION - RETIREMENT FUND - JUNE 30, 1999 GASB DISCLOSURE INFORMATION			
	Non-Hazardous Position Employees	Hazardous Position Employees	Total
NUMBER OF MEMBERS			
Inactive Members			
Retired Members	18,221	2,509	20,730
Beneficiaries	2,466	195	2,661
Vested Retirements	3,238	128	3,366
Vested Membership	19,347	331	19,678
Total Inactive Members	43,272	3,163	46,435
Active Members			
Vested Members	43,289	4,184	47,473
Nonvested Members	30,862	3,304	34,166
Total Active Members	74,151	7,488	81,639
Total Members	117,423	10,651	128,074

TABLE X COUNTY EMPLOYEES RETIREMENT SYSTEM ACCOUNTANT'S INFORMATION - INSURANCE FUND - JUNE 30, 1999 INFORMATION REQUIRED UNDER GASB STATEMENT NO. 12				
		Non-Hazardous Position Employees	Hazardous Position Employees	Total
NUMBER OF MEMBERS				
Contracts in Force - Retirees and Dependents				
(1) Single;	- 100% Paid	1,723	602	2,325
Pre-Medicare	- 75% Paid	443	28	471
	- 50% Paid	380	28	408
	- 25% Paid	242	13	255
	- 0% Paid	510	0	510
(2) Family;	- 100% Paid	115	480	595
Pre-Medicare	- 75% Paid	16	11	27
	- 50% Paid	13	11	24
	- 25% Paid	6	3	9
	- 0% Paid	0	0	0
(3) Parent +;	- 100% Paid	64	134	198
Pre-Medicare	- 75% Paid	10	12	22
	- 50% Paid	6	2	8
	- 25% Paid	7	0	7
	- 0% Paid	54	0	54
(4) Couple +;	- 100% Paid	395	648	1,043
Pre-Medicare	- 75% Paid	54	7	61
	- 50% Paid	67	8	75
	- 25% Paid	34	4	38
	- 0% Paid	4	1	5
(5) Medicare	- 100% Paid	34	2	36
Regular	- 75% Paid	268	8	276
	- 50% Paid	549	7	556
	- 25% Paid	643	5	648
	- 0% Paid	494	0	494
(6) Medicare High	- 100% Paid	2,645	417	3,062
Option	- 75% Paid	1,462	55	1,517
	- 50% Paid	1,564	35	1,599
	- 25% Paid	876	19	895
	- 0% Paid	1,071	2	1,073
Vested Retirements		3,238	128	3,366
Vested Membership		19,347	331	19,678
Active Members		74,151	7,488	81,639
UNFUNDED MEDICAL BENEFIT OBLIGATION				
Medical Benefit Obligation				
Retirees, Beneficiaries and Vested Terminated Members		\$ 351,893,487	\$ 218,739,057	\$ 570,632,544
Active Members		930,980,799	299,541,058	1,230,521,857
Total Medical Benefit Obligation		\$1,282,874,286	\$ 518,280,115	\$1,801,154,401
Net Assets at Actuarial Value		\$ 231,937,169	\$ 114,590,223	\$346,527,392
Unfunded Medical Benefit Obligation		\$1,050,937,117	\$ 403,689,892	\$1,454,627,009
NOTE: Medical Benefit Obligation based on Entry Age Normal Actuarial Cost Method				

SECTION IV

COMMENTS AND CERTIFICATION

Comments

For the Retirement Fund, the total Actuarial Accrued Liability has increased from \$3,529,912,902 on June 30, 1998 to \$3,955,132,659 on June 30, 1999. The Unfunded Actuarial Accrued Liability has decreased from \$(743,349,593) to \$(1,241,746,262). Total actuarial value of assets as of June 30, 1999 was equal to \$5,196,878,921. The Unfunded Actuarial Accrued Liability decreased from (47.36%) to (72.61%) as a percentage of annual payroll and decreased from (21.1%) to (31.4%) as a percentage of the Actuarial Accrued Liability in the year ended June 30, 1999.

For the Insurance Fund, the total Actuarial Accrued Liability has increased from \$1,706,626,110 on June 30, 1998 to \$1,801,154,401 on June 30, 1999. The Unfunded Actuarial Accrued Liability has increased from \$1,451,039,735 to \$1,454,627,009. Total actuarial value of assets as of June 30, 1999 was equal to \$346,527,392. The Unfunded Actuarial Accrued Liability decreased from 85.0% to 80.8% as a percentage of the Actuarial Accrued Liability in the year ended June 30, 1999.

The change in contribution rate between the 1998 and 1999 valuations is a function of actual plan experience since the last valuation. A formal gain and loss analysis would identify the portion of the contribution rate change attributable to each element of plan experience and benefit change. However, undertaking such an analysis would be extremely time consuming and expensive. In lieu of the formal analysis, we have estimated the impact of the various components of gain and loss based on changes in statistical averages of each group. The following table shows the results of this computation:

	Non-Hazardous Position Employees	Hazardous Position Employees
June 30, 1998 contribution Rate	7.28%	17.55%
Change in Payment Percentage Due to Covered Payroll Experience	0.08%	0.07%
Investment Return	(1.51%)	(2.36%)
Salary Increases	0.12%	0.40%
Decrements Experience*	0.01%	0.04%
Change in Insurance Fund Rate	0.24%	0.45%
Change in Administrative Expense Rate	0.03%	(0.06%)
Retiree COLA effective 7/1/98	0.09%	0.19%
Legislated Benefit Improvements	N/A	N/A
June 30, 1999 Contribution Rate	6.34%	16.28%
* Includes mortality, disability, termination of employment and retirement experience.		

The annual contribution rate required by the participating Agencies to provide the Normal Cost, 30 year amortization of the Unfunded Actuarial Accrued Liability under the level-percentage-of-payroll method, and pay administrative expenses for Non-Hazardous position employees is 2.31%. An additional 4.03% is required to fund medical insurance for retirees, bringing the required contribution up to 6.34%. This is less than the current 7.28% budgeted contribution rate. Therefore, it is our opinion that the contribution rate beginning July 1, 2000 should be adjusted to the 6.34% level, and we so recommend.

The annual contribution rate required by the participating Agencies to provide the Normal Cost, 30 year amortization of the Unfunded Actuarial Accrued Liability under the level-percentage-of-payroll method, and pay administrative expenses for Hazardous position employees is 6.13%. An additional 10.15% is required to fund medical insurance for retirees, bringing the required contribution up to 16.28%. This is less than the current 17.55% budgeted contribution rate. Therefore, it is our opinion that the contribution rate beginning July 1, 2000 should be adjusted to the 16.28% level, and we so recommend.

The recommended contribution rates are based on current statutory benefits. The budgeted contribution rates will again be reviewed in the June 30, 2000 valuation.

The following table shows the total Actuarial Accrued Liability, the Unfunded Actuarial Accrued Liability, percent unfunded and the growth of the invested assets relative to retirement related benefits at selected intervals since the inception of the System.

COUNTY EMPLOYEES RETIREMENT SYSTEM - RETIREMENT FUND					
July 1 of Year Shown	Total Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Percent Unfunded	Actuarial Value of Assets	Increase in Assets
1960	\$ 5,602,131	\$ 4,737,680	84.6%	\$ 864,451	\$ 864,451
1965	12,510,487	6,897,273	55.1%	5,613,214	1,255,742
1971	40,305,948	16,885,927	41.9%	23,420,022*	4,850,170
1975	85,322,085	24,467,454	28.7%	60,854,631*	11,704,780
1976	128,824,236	50,089,614	38.9%	78,734,622*	17,879,991
1977	152,900,347	52,474,756	34.3%	100,425,591*	21,690,969
1978	175,194,867	50,394,913	28.8%	124,799,954*	24,374,363
1979	213,834,377	60,742,472	28.4%	153,091,905*	28,291,951
1980	266,018,621	75,787,680	28.5%	190,230,941*	37,139,036
1981	260,872,162	27,101,917	10.4%	233,770,245	43,539,304
1982	306,087,531	20,552,642	6.7%	285,534,889	51,764,644
1983	340,705,763	(2,450,006)	(0.8%)	343,155,769	57,620,880
1984	421,336,269	15,148,838	3.6%	406,187,431	63,031,662
1985	463,618,532	(14,424,689)	(3.1%)	478,043,221	71,855,790
1986	535,948,094	(67,867,706)	(12.7%)	603,815,800	125,772,579
1987	678,442,760	(49,287,967)	(7.3%)	727,730,727	123,914,927
1988	829,346,323	(10,232,573)	(1.2%)	839,578,896	111,848,169
1989	1,113,868,548	35,815,913	3.2%	1,078,052,635	238,473,739
1990	1,432,323,666	162,257,399	11.3%	1,270,066,267	192,013,632
1991	1,654,338,706	258,111,701	15.6%	1,396,227,005	126,160,738
1992**	1,861,978,403	126,939,495	6.8%	1,735,038,908	338,811,903
1993	2,079,930,047	94,249,338	4.5%	1,985,680,709	250,641,801
1994	2,330,344,241	156,989,469	6.7%	2,173,354,772	187,674,063
1995	2,603,575,921	149,447,861	5.7%	2,454,128,060	280,773,288
1996	2,778,316,473	(101,712,065)	(3.7%)	2,880,028,538	425,900,478
1997	3,144,928,093	(369,096,965)	(11.7%)	3,514,025,868	633,997,330
1998	3,529,912,902	(743,349,593)	(21.1%)	4,273,262,495	759,236,627
1999	3,955,132,659	(1,241,746,262)	(31.4%)	5,196,878,921	923,616,426
*Includes capitalized appreciation of investments.					
**Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.					

The following table shows the total Actuarial Accrued Liability, the Unfunded Actuarial Accrued Liability, percent unfunded and the growth of the invested assets relative to medical premium benefits since 1990.

COUNTY EMPLOYEES RETIREMENT SYSTEM - INSURANCE FUND					
July 1 of Year Shown	Total Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Percent Unfunded	Actuarial Value of Assets	Increase in Assets
1990	\$ 700,151,838	\$ 670,720,901	95.8%	\$ 29,430,397	\$ N/A
1991	823,012,809	780,592,065	94.8%	42,420,744	12,989,807
1992	1,041,905,457	984,949,556	94.5%	56,955,901	14,535,157
1993	1,244,258,042	1,170,004,170	94.0%	74,253,872	17,297,971
1994	1,551,138,800	1,451,623,905	93.6%	99,514,895	25,261,023
1995	1,679,893,225	1,554,439,285	92.5%	125,453,940	25,939,045
1996**	1,386,659,746	1,219,123,505	87.9%	167,536,241	42,082,301
1997	1,541,360,457	1,336,839,680	86.7%	204,520,777	36,984,536
1998	1,706,626,110	1,451,039,735	85.0%	255,586,375	51,065,598
1999	1,801,154,401	1,454,627,009	80.8%	346,527,392	90,941,017
**Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.					

Certification

On the basis of the actuarial assumptions given and the data furnished by the General Manager of the County Employees Retirement System, it is certified that the actuarial valuation has been made by the use of accepted actuarial principles and that adequate provision is being made for the funding of future benefits.

I, Stephen A. Gagel, am a Fellow of the Society of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



October 29, 1999

Stephen A. Gagel, F.S.A.

Date

I, Jeannette I. Moermond, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



October 29, 1999

Jeannette I. Moermond

Date

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Louisville, Kentucky 40202-3431
☎(502) 561-4500

SECTION V
STATISTICAL DATA
AS OF
JUNE 30, 1999

COUNTY EMPLOYEE S RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
JUNE 30, 1999

EARNINGS BY AGE GROUPS

AGE GROUP	.....MALE.....			.....FEMALE.....			.....TOTAL.....		
	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE
0-19	1,982	25,334,880	12,782	65	813,216	12,511	2,047	26,148,096	12,774
20-24	2,632	42,663,360	16,209	1,068	14,284,728	13,375	3,700	56,948,088	15,391
25-29	2,067	41,533,656	20,094	2,676	41,737,224	15,597	4,743	83,270,880	17,557
30-34	2,465	57,124,080	23,174	4,177	65,539,896	15,691	6,642	122,663,976	18,468
35-39	3,497	87,203,472	24,937	6,674	104,640,768	15,679	10,171	191,844,240	18,862
40-44	3,938	107,369,616	27,265	8,157	138,677,772	17,001	12,095	246,047,388	20,343
45-49	4,023	111,650,580	27,753	7,780	139,598,352	17,943	11,803	251,248,932	21,287
50-54	3,308	92,263,356	27,891	6,444	118,280,148	18,355	9,752	210,543,504	21,590
55-59	2,466	62,935,536	25,521	4,550	82,101,648	18,044	7,016	145,037,184	20,672
60-64	1,637	38,216,196	23,345	2,471	42,999,888	17,402	4,108	81,216,084	19,770
65-69	582	11,073,648	19,027	794	12,124,152	15,270	1,376	23,197,800	16,859
70-74	260	4,563,456	17,552	260	4,178,868	16,073	520	8,742,324	16,812
75+	94	1,699,332	18,078	84	1,209,720	14,401	178	2,909,052	16,343
TOTAL	28,951	683,631,168	23,613	45,200	766,186,380	16,951	74,151	1,449,817,548	19,552

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EARNINGS BY SERVICE GROUPS

SERVICE GROUPMALE.....		FEMALE.....		TOTAL.....		
	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE
0	2,425	36,126,780	14,898	1,858	23,175,288	12,473	4,283	59,302,068	13,846
1	4,810	81,352,032	16,913	5,958	76,290,972	12,805	10,768	157,643,004	14,640
2	2,904	56,279,544	19,380	4,617	63,020,712	13,650	7,521	119,300,256	15,862
3	2,095	43,835,088	20,924	3,863	55,369,248	14,333	5,958	99,204,336	16,651
4	1,689	36,927,108	21,863	3,319	50,799,384	15,306	5,008	87,726,492	17,517
0-4	13,923	254,520,552	18,281	19,615	268,655,604	13,696	33,538	523,176,156	15,600
5-9	6,243	155,043,552	24,835	12,642	213,327,660	16,875	18,885	368,371,212	19,506
10-14	4,133	114,886,212	27,797	6,601	130,937,592	19,836	10,734	245,823,804	22,901
15-19	2,283	70,537,500	30,897	3,447	74,528,004	21,621	5,730	145,065,504	25,317
20-24	1,538	53,555,388	34,821	2,081	53,001,708	25,469	3,619	106,557,096	29,444
25-29	653	26,407,260	40,440	651	19,767,996	30,366	1,304	46,175,256	35,410
30-34	135	6,490,752	48,080	130	4,445,184	34,194	265	10,935,936	41,268
35-39	34	1,741,488	51,220	20	862,764	43,138	54	2,604,252	48,227
40+	9	448,464	49,829	13	659,868	50,759	22	1,108,332	50,379
TOTAL	28,951	683,631,168	23,613	45,200	766,186,380	16,951	74,151	1,449,817,548	19,552

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COUNTY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
JUNE 30, 1999

EARNINGS BY AGE GROUPS

AGE GROUP	.....MALE.....			.....FEMALE.....			.....TOTAL.....		
	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE
0-19	71	1,439,136	20,270	0	0	0	71	1,439,136	20,270
20-24	331	8,004,024	24,181	22	490,776	22,308	353	8,494,800	24,065
25-29	1,064	31,447,392	29,556	140	3,939,588	28,140	1,204	35,386,980	29,391
30-34	1,329	44,379,888	33,393	141	4,348,368	30,839	1,470	48,728,256	33,148
35-39	1,338	48,127,248	35,970	155	5,059,968	32,645	1,493	53,187,216	35,624
40-44	1,021	39,001,224	38,199	129	4,574,496	35,461	1,150	43,575,720	37,892
45-49	845	35,891,544	42,475	86	2,926,416	34,028	931	38,817,960	41,695
50-54	435	17,810,508	40,944	56	1,752,288	31,291	491	19,562,796	39,843
55-59	186	7,208,136	38,753	39	987,300	25,315	225	8,195,436	36,424
60-64	54	1,699,488	31,472	6	144,732	24,122	60	1,844,220	30,737
65-69	26	726,348	27,936	3	48,612	16,204	29	774,960	26,723
70-74	9	235,356	26,151	1	14,736	14,736	10	250,092	25,009
75+	1	22,368	22,368	0	0	0	1	22,368	22,368
TOTAL	6,710	235,992,660	35,170	778	24,287,280	31,218	7,488	260,279,940	34,760

EARNINGS BY SERVICE GROUPS

SERVICE GROUP	.....MALE.....			.....FEMALE.....			.....TOTAL.....		
	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE
0	305	6,519,336	21,375	52	1,010,652	19,436	357	7,529,988	21,092
1	899	23,761,860	26,431	170	4,167,192	24,513	1,069	27,929,052	26,126
2	509	14,587,452	28,659	62	1,716,816	27,691	571	16,304,268	28,554
3	457	14,275,176	31,237	64	1,780,920	27,827	521	16,056,096	30,818
4	468	15,001,344	32,054	59	1,807,704	30,639	527	16,809,048	31,896
0-4	2,638	74,145,168	28,107	407	10,483,284	25,757	3,045	84,628,452	27,793
5-9	1,761	62,454,984	35,466	212	7,164,876	33,797	1,973	69,619,860	35,286
10-14	1,195	47,110,368	39,423	96	3,733,992	38,896	1,291	50,844,360	39,384
15-19	420	17,735,052	42,226	37	1,647,384	44,524	457	19,382,436	42,412
20-24	401	19,248,108	48,000	23	1,096,020	47,653	424	20,344,128	47,981
25-29	237	12,141,792	51,231	3	161,724	53,908	240	12,303,516	51,265
30-34	47	2,539,632	54,035	0	0	0	47	2,539,632	54,035
35-39	10	576,228	57,623	0	0	0	10	576,228	57,623
40+	1	41,328	41,328	0	0	0	1	41,328	41,328
TOTAL	6,710	235,992,660	35,170	778	24,287,280	31,218	7,488	260,279,940	34,760

COUNTY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
JUNE 30, 1999

SERVICE GROUPS BY AGE GROUPS

<u>MALE</u>										
AGESERVICE GROUP.....									
GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	1,982									1,982
20-24	2,470	162								2,632
25-29	1,624	432	11							2,067
30-34	1,419	755	275	16						2,465
35-39	1,524	917	697	320	39					3,497
40-44	1,357	944	721	482	381	53				3,938
45-49	1,177	976	722	452	428	257	11			4,023
50-54	977	797	609	376	313	178	54	4		3,308
55-59	714	578	507	311	195	106	40	15		2,466
60-64	428	413	371	233	115	46	21	4	6	1,637
65-69	175	162	122	58	46	7	8	3	1	582
70-74	64	83	68	17	17	3	1	6	1	260
75+	12	24	30	18	4	3		2	1	94
TOTAL	13,923	6,243	4,133	2,283	1,538	653	135	34	9	28,951

<u>FEMALE</u>										
AGE	.....SERVICE GROUP.....									
GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	65									65
20-24	1,030	38								1,068
25-29	2,240	423	13							2,676
30-34	2,946	936	277	18						4,177
35-39	4,004	1,822	606	215	27					6,674
40-44	3,576	2,823	1,018	412	300	28				8,157
45-49	2,573	2,646	1,464	588	344	150	15			7,780
50-54	1,568	1,905	1,484	831	433	175	42	6		6,444
55-59	969	1,152	962	777	489	153	41	6	1	4,550
60-64	447	612	519	406	339	111	24	8	5	2,471
65-69	139	207	182	138	96	23	6		3	794
70-74	38	61	62	43	44	8			4	260
75+	20	17	14	19	9	3	2			84
TOTAL	19,615	12,642	6,601	3,447	2,081	651	130	20	13	45,200

<u>TOTAL</u>										
AGE	.....SERVICE GROUP.....									
GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	2,047									2,047
20-24	3,500	200								3,700
25-29	3,864	855	24							4,743
30-34	4,365	1,691	552	34						6,642
35-39	5,528	2,739	1,303	535	66					10,171
40-44	4,933	3,767	1,739	894	681	81				12,095
45-49	3,750	3,622	2,186	1,040	772	407	26			11,803
50-54	2,545	2,702	2,093	1,207	746	353	96	10		9,752
55-59	1,683	1,730	1,469	1,088	684	259	81	21	1	7,016
60-64	875	1,025	890	639	454	157	45	12	11	4,108
65-69	314	369	304	196	142	30	14	3	4	1,376
70-74	102	144	130	60	61	11	1	6	5	520
75+	32	41	44	37	13	6	2	2	1	178
TOTAL	33,538	18,885	10,734	5,730	3,619	1,304	265	54	22	74,151

COUNTY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
JUNE 30, 1999

SERVICE GROUPS BY AGE GROUPS

<u>MALE</u>										
AGESERVICE GROUP.....									
GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	71									71
20-24	325	6								331
25-29	830	234								1,064
30-34	572	585	169	3						1,329
35-39	349	413	489	86	1					1,338
40-44	184	236	292	191	113	5				1,021
45-49	120	162	138	91	200	132	2			845
50-54	92	63	61	31	71	82	33	2		435
55-59	56	31	36	14	15	16	11	7		186
60-64	25	20	6	1		1	1			54
65-69	8	9	4	2	1	1			1	26
70-74	5	2		1				1		9
75+	1									1
TOTAL	2,638	1,761	1,195	420	401	237	47	10	1	6,710

<u>FEMALE</u>										
AGE	.....SERVICE GROUP.....									
GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19										0
20-24	21	1								22
25-29	119	21								140
30-34	82	51	8							141
35-39	61	47	38	9						155
40-44	41	37	24	17	10					129
45-49	30	24	15	4	11	2				86
50-54	27	16	4	6	2	1				56
55-59	20	12	6	1						39
60-64	3	2	1							6
65-69	2	1								3
70-74	1									1
75+										0
TOTAL	407	212	96	37	23	3	0	0	0	778

<u>TOTAL</u>										
AGE	.....SERVICE GROUP.....									
GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	71									71
20-24	346	7								353
25-29	949	255								1,204
30-34	654	636	177	3						1,470
35-39	410	460	527	95	1					1,493
40-44	225	273	316	208	123	5				1,150
45-49	150	186	153	95	211	134	2			931
50-54	119	79	65	37	73	83	33	2		491
55-59	76	43	42	15	15	16	11	7		225
60-64	28	22	7	1		1	1			60
65-69	10	10	4	2	1	1			1	29
70-74	6	2		1				1		10
75+	1									1
TOTAL	3,045	1,973	1,291	457	424	240	47	10	1	7,488

COUNTY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
JUNE 30, 1999

AVERAGE EARNINGS FOR SERVICE GROUPS BY AGE GROUPS

AGE GROUP	SERVICE GROUP.....									
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	2,047 12,774									2,047 12,774
20-24	3,500 15,149	200 19,629								3,700 15,391
25-29	3,864 16,740	855 21,019	24 25,626							4,743 17,557
30-34	4,365 15,903	1,691 22,597	552 25,524	34 27,820						6,642 18,468
35-39	5,528 15,143	2,739 20,637	1,303 26,040	535 28,820	66 34,243					10,171 18,862
40-44	4,933 15,671	3,767 19,323	1,739 24,990	894 30,615	681 32,424	81 37,623				12,095 20,343
45-49	3,750 16,465	3,622 19,027	2,186 22,798	1,040 26,810	772 34,172	407 37,891	26 41,059			11,803 21,287
50-54	2,545 16,672	2,702 19,329	2,093 21,825	1,207 24,371	746 30,842	353 37,442	96 42,648	10 47,125		9,752 21,590
55-59	1,683 15,468	1,730 18,388	1,469 21,676	1,088 22,832	684 25,780	259 31,881	81 41,113	21 57,849	1 75,216	7,016 20,672
60-64	875 14,640	1,025 17,628	890 20,490	639 21,748	454 23,071	157 31,342	45 39,122	12 42,450	11 49,067	4,108 19,770
65-69	314 13,748	369 14,494	304 17,232	196 18,791	142 21,692	30 27,282	14 35,540	3 20,472	4 38,349	1,376 16,859
70-74	102 12,092	144 13,999	130 17,018	60 16,109	61 22,621	11 28,331	1 64,200	6 43,086	5 59,998	520 16,812
75+	32 10,007	41 13,821	44 15,596	37 17,423	13 19,997	6 30,132	2 60,852	2 44,418	1 39,996	178 16,343
TOTAL	33,538 15,600	18,885 19,506	10,734 22,901	5,730 25,317	3,619 29,444	1,304 35,410	265 41,268	54 48,227	22 50,379	74,151 19,552

TOTAL EARNINGS 1,449,817,5
 48
AVERAGE AGE 43.19
AVERAGE SERVICE 7.27

Note: Earnings shown in this
matrix
have not been limited by
401(a)(17).

COUNTY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
JUNE 30, 1999

AVERAGE EARNINGS FOR SERVICE GROUPS BY AGE GROUPS

AGE GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	71 20,270									71 20,270
20-24	346 23,936	7 30,423								353 24,065
25-29	949 28,010	255 34,532								1,204 29,391
30-34	654 28,699	636 35,956	177 39,474	3 34,804						1,470 33,148
35-39	410 28,441	460 35,873	527 40,000	95 41,145	1 35,760					1,493 35,624
40-44	225 28,980	273 34,796	316 39,655	208 43,799	123 46,164	5 47,328				1,150 37,892
45-49	150 30,115	186 34,576	153 38,601	95 43,991	211 50,410	134 52,522	2 55,002			931 41,695
50-54	119 30,176	79 35,841	65 35,504	37 36,918	73 45,652	83 50,232	33 55,799	2 61,764		491 39,843
55-59	76 28,680	43 33,686	42 39,711	15 34,908	15 41,525	16 49,232	11 50,280	7 58,869		225 36,424
60-64	28 28,253	22 31,932	7 35,025	1 32,256		1 38,004	1 35,196			60 30,737
65-69	10 14,596	10 27,157	4 29,970	2 62,052	1 38,148	1 33,972			1 41,328	29 26,723
70-74	6 21,418	2 23,484		1 33,996				1 40,620		10 25,009
75+	1 22,368									1 22,368
TOTAL	3,045 27,793	1,973 35,286	1,291 39,384	457 42,412	424 47,981	240 51,265	47 54,035	10 57,623	1 41,328	7,488 34,760
TOTAL EARNINGS	260,279,940									
AVERAGE SERVICE	37.47									
AVERAGE AGE	7.98									

Note: Earnings shown in this matrix have not been limited by 401(a)(17).

COUNTY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
TABULATION BY MONTHLY SALARY
JUNE 30, 1999

MONTHLY SALARY		NUMBER OF MEMBERS		
		MALES	FEMALES	TOTAL
UNDER	\$ 500	826	839	1,665
\$ 500 -	\$ 749	1,360	3,246	4,606
\$ 750 -	\$ 999	2,899	10,193	13,092
\$1,000 -	\$1,249	3,109	9,221	12,330
\$1,250 -	\$1,499	3,493	6,752	10,245
\$1,500 -	\$1,749	3,286	4,425	7,711
\$1,750 -	\$1,999	2,847	3,351	6,198
\$2,000 -	\$2,249	2,364	2,355	4,719
\$2,250 -	\$2,499	1,802	1,496	3,298
\$2,500 -	\$2,749	1,497	1,124	2,621
\$2,750 -	\$2,999	1,181	640	1,821
\$3,000 -	\$3,499	1,597	670	2,267
\$3,500 -	\$3,999	921	370	1,291
\$4,000 -	\$4,499	597	177	774
\$4,500 -	\$4,999	500	177	677
\$5,000 -	\$5,499	243	59	302
\$5,500 -	\$5,999	152	42	194
\$6,000 -	\$6,499	81	14	95
\$6,500 -	\$6,999	54	4	58
\$7,000 -	\$7,499	41	9	50
\$7,500 AND OVER		101	36	137
TOTAL		28,951	45,200	74,151
HIGHLY COMPENSATED EMPLOYEES (ESTIMATED)				
ANNUAL SALARY OF \$80,000 AND OVER		172	45	217

COUNTY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
TABULATION BY MONTHLY SALARY
JUNE 30, 1999

MONTHLY SALARY		NUMBER OF MEMBERS		
		MALES	FEMALES	TOTAL
UNDER	\$ 500	47	1	48
\$ 500 -	\$ 749	10	3	13
\$ 750 -	\$ 999	32	10	42
\$1,000 -	\$1,249	36	12	48
\$1,250 -	\$1,499	116	35	151
\$1,500 -	\$1,749	272	64	336
\$1,750 -	\$1,999	487	91	578
\$2,000 -	\$2,249	512	71	583
\$2,250 -	\$2,499	830	97	927
\$2,500 -	\$2,749	730	84	814
\$2,750 -	\$2,999	697	65	762
\$3,000 -	\$3,499	1,314	123	1,437
\$3,500 -	\$3,999	838	83	921
\$4,000 -	\$4,499	406	23	429
\$4,500 -	\$4,999	187	8	195
\$5,000 -	\$5,499	108	3	111
\$5,500 -	\$5,999	49	5	54
\$6,000 -	\$6,499	20	0	20
\$6,500 -	\$6,999	12	0	12
\$7,000 -	\$7,499	4	0	4
\$7,500 AND OVER		3	0	3
TOTAL		6,710	778	7,488
HIGHLY COMPENSATED EMPLOYEES (ESTIMATED)				
ANNUAL SALARY OF \$80,000 AND OVER		13	0	13

COUNTY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
MEMBERS WITH SERVICE IN ANOTHER SYSTEM

JUNE 30, 1999

MEMBERS CURRENTLY ACTIVE IN CERS NONHAZARDOUS			
<u>SERVICE IN</u>	<u>ACTIVE IN OTHER SYSTEM</u>	<u>INACTIVE IN OTHER SYSTEM</u>	<u>TOTAL</u>
KERS - NONHAZARDOUS	566	1,696	2,262
KERS - HAZARDOUS	14	41	55
CERS - HAZARDOUS	0	177	177
STATE POLICE	4	17	21
TOTAL - ALL SYSTEMS	584	1,931	2,515

MEMBERS CURRENTLY NOT ACTIVE IN CERS NONHAZARDOUS			
<u>SERVICE IN</u>	<u>ACTIVE IN OTHER SYSTEM</u>	<u>INACTIVE IN OTHER SYSTEM</u>	<u>TOTAL</u>
KERS - NONHAZARDOUS	1,890	160	2,050
KERS - HAZARDOUS	149	34	183
CERS - HAZARDOUS	2,200	36	2,236
STATE POLICE	69	12	81
TOTAL - ALL SYSTEMS	4,308	242	4,550

NOTE: DOES NOT INCLUDE INDIVIDUALS IN PAY STATUS IN OTHER SYSTEMS

COUNTY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
MEMBERS WITH SERVICE IN ANOTHER SYSTEM
JUNE 30, 1999

MEMBERS CURRENTLY ACTIVE IN CERS HAZARDOUS			
<u>SERVICE IN</u>	<u>ACTIVE IN OTHER SYSTEM</u>	<u>INACTIVE IN OTHER SYSTEM</u>	<u>TOTAL</u>
KERS - NONHAZARDOUS	17	202	219
KERS - HAZARDOUS	4	58	62
CERS - NONHAZARDOUS	0	2,200	2,200
STATE POLICE	1	50	51
TOTAL - ALL SYSTEMS	22	2,510	2,532

MEMBERS CURRENTLY NOT ACTIVE IN CERS HAZARDOUS			
<u>SERVICE IN</u>	<u>ACTIVE IN OTHER SYSTEM</u>	<u>INACTIVE IN OTHER SYSTEM</u>	<u>TOTAL</u>
KERS - NONHAZARDOUS	49	23	72
KERS - HAZARDOUS	15	1	16
CERS - NONHAZARDOUS	177	36	213
STATE POLICE	60	4	64
TOTAL - ALL SYSTEMS	301	64	365

NOTE: DOES NOT INCLUDE INDIVIDUALS IN PAY STATUS IN OTHER SYSTEMS

COUNTY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
RETIRED LIVES SUMMARY
JUNE 30, 1999

	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS
BASIC FORM	2,072	1,132,506.88	6,234	2,433,825.79	8,306	3,566,332.67
STRAIGHT LIFE (OLD PLAN)	0	0.00	0	0.00	0	0.00
JOINT & SURVIVOR						
100% TO BENEFICIARY	1,496	840,285.91	544	165,361.05	2,040	1,005,646.96
66-2/3% TO BENEFICIARY	379	395,489.52	137	77,262.01	516	472,751.53
50% TO BENEFICIARY	637	581,796.83	342	194,911.94	979	776,708.77
POP-UP OPTION	1,016	740,751.47	571	299,063.58	1,587	1,039,815.05
10 YEARS CERTAIN	0	0.00	1	447.35	1	447.35
10 YEARS CERTAIN & LIFE	1,099	521,226.81	1,749	639,766.52	2,848	1,160,993.33
SOCIAL SECURITY OPTION						
OPTION C	156	209,110.24	275	196,121.60	431	405,231.84
OPTION D	386	501,248.58	144	106,888.12	530	608,136.70
OPTION E	0	0.00	0	0.00	0	0.00
OPTION F	0	0.00	0	0.00	0	0.00
DEPENDENT CHILD	1	317.03	1	317.03	2	634.06
REFUND	0	0.00	0	0.00	0	0.00
15 YEARS CERTAIN & LIFE	378	221,952.88	241	98,674.96	619	320,627.84
20 YEARS CERTAIN & LIFE	204	156,409.47	158	75,732.90	362	232,142.37
5 YEARS ONLY	0	0.00	0	0.00	0	0.00
TOTAL	7,824	5,301,095.62	10,397	4,288,372.85	18,221	9,589,468.47

COUNTY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
RETIRED LIVES SUMMARY
JUNE 30, 1999

	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS
BASIC FORM	276	442,228.50	65	49,677.64	341	491,906.14
STRAIGHT LIFE (OLD PLAN)	0	0.00	0	0.00	0	0.00
JOINT & SURVIVOR						
100% TO BENEFICIARY	282	387,441.88	15	7,613.71	297	395,055.59
66-2/3% TO BENEFICIARY	138	257,021.03	5	7,319.80	143	264,340.83
50% TO BENEFICIARY	206	336,675.79	10	8,069.00	216	344,744.79
POP-UP OPTION	675	1,093,474.18	21	19,665.69	696	1,113,139.87
10 YEARS CERTAIN	48	106,955.50	4	10,429.29	52	117,384.79
10 YEARS CERTAIN & LIFE	101	147,259.61	20	19,685.48	121	166,945.09
SOCIAL SECURITY OPTION						
OPTION C	87	136,662.32	5	5,062.57	92	141,724.89
OPTION D	277	395,638.47	12	7,946.51	289	403,584.98
OPTION E	0	0.00	0	0.00	0	0.00
OPTION F	0	0.00	0	0.00	0	0.00
DEPENDENT CHILD	85	22,255.18	69	18,200.89	154	40,456.07
REFUND	0	0.00	0	0.00	0	0.00
15 YEARS CERTAIN & LIFE	33	44,384.71	1	709.76	34	45,094.47
20 YEARS CERTAIN & LIFE	64	96,331.31	10	8,169.91	74	104,501.22
5 YEARS ONLY	0	0.00	0	0.00	0	0.00
TOTAL	2,272	3,466,328.48	237	162,550.25	2,509	3,628,878.73

COUNTY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
BENEFICIARY SUMMARY
JUNE 30, 1999

	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS
BASIC FORM	0	0.00	0	0.00	0	0.00
STRAIGHT LIFE (OLD PLAN)	0	0.00	0	0.00	0	0.00
JOINT & SURVIVOR						
100% TO BENEFICIARY	170	55,615.28	1,034	349,628.94	1,204	405,244.22
66-2/3% TO BENEFICIARY	15	4,162.21	121	39,135.04	136	43,297.25
50% TO BENEFICIARY	28	6,479.04	218	58,303.71	246	64,782.75
POP-UP OPTION	32	13,034.04	112	67,081.42	144	80,115.46
10 YEARS CERTAIN	45	15,590.14	100	59,911.00	145	75,501.14
10 YEARS CERTAIN & LIFE	72	32,433.76	125	56,554.85	197	88,988.61
SOCIAL SECURITY OPTION						
OPTION C	0	0.00	0	0.00	0	0.00
OPTION D	8	2,847.73	38	42,358.36	46	45,206.09
OPTION E	0	0.00	0	0.00	0	0.00
OPTION F	1	384.73	4	602.21	5	986.94
DEPENDENT CHILD	0	0.00	0	0.00	0	0.00
REFUND	0	0.00	0	0.00	0	0.00
15 YEARS CERTAIN & LIFE	31	17,173.63	90	43,384.11	121	60,557.74
20 YEARS CERTAIN & LIFE	22	7,660.89	38	24,721.16	60	32,382.05
5 YEARS ONLY	92	32,568.85	70	46,152.64	162	78,721.49
TOTAL	516	187,950.30	1,950	787,833.44	2,466	975,783.74

COUNTY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
BENEFICIARY SUMMARY
JUNE 30, 1999

	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS
BASIC FORM	0	0.00	0	0.00	0	0.00
STRAIGHT LIFE (OLD PLAN)	0	0.00	0	0.00	0	0.00
JOINT & SURVIVOR						
100% TO BENEFICIARY	2	1,397.38	71	68,607.73	73	70,005.11
66-2/3% TO BENEFICIARY	0	0.00	13	13,146.93	13	13,146.93
50% TO BENEFICIARY	0	0.00	15	9,158.41	15	9,158.41
POP-UP OPTION	0	0.00	21	29,308.28	21	29,308.28
10 YEARS CERTAIN	7	10,525.67	10	16,680.86	17	27,206.53
10 YEARS CERTAIN & LIFE	0	0.00	1	1,086.97	1	1,086.97
SOCIAL SECURITY OPTION						
OPTION C	0	0.00	0	0.00	0	0.00
OPTION D	1	3,220.42	30	41,213.65	31	44,434.07
OPTION E	0	0.00	0	0.00	0	0.00
OPTION F	0	0.00	3	2,918.60	3	2,918.60
DEPENDENT CHILD	1	284.05	0	0.00	1	284.05
REFUND	0	0.00	0	0.00	0	0.00
15 YEARS CERTAIN & LIFE	0	0.00	1	73.03	1	73.03
20 YEARS CERTAIN & LIFE	1	1,134.01	3	5,219.51	4	6,353.52
5 YEARS ONLY	14	8,159.21	1	554.53	15	8,713.74
TOTAL	26	24,720.74	169	187,968.50	195	212,689.24

COUNTY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
VESTED RETIREMENT SUMMARY
JUNE 30, 1999

AGE NEAREST BIRTHDAY	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS
15-19	0	0.00	0	0.00	0	0.00
20-24	8	1,066.94	0	0.00	8	1,066.94
25-29	26	3,934.80	36	5,227.56	62	9,162.36
30-34	94	20,028.84	129	22,824.27	223	42,853.11
35-39	150	43,628.72	252	48,861.45	402	92,490.17
40-44	184	67,525.77	381	76,884.95	565	144,410.72
45-49	206	78,898.10	432	105,113.18	638	184,011.28
50-54	214	84,114.59	461	109,689.82	675	193,804.41
55-59	138	41,366.08	243	52,727.56	381	94,093.64
60-64	70	19,736.11	106	20,221.52	176	39,957.63
65-69	33	5,139.74	32	6,478.73	65	11,618.47
70-74	11	605.96	8	1,443.56	19	2,049.52
75-79	12	1,186.52	6	578.93	18	1,765.45
80-84	3	12.02	2	228.56	5	240.58
85 +	0	0.00	1	0.95	1	0.95
TOTAL	1,149	367,244.19	2,089	450,281.04	3,238	817,525.23

COUNTY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
VESTED RETIREMENT SUMMARY
JUNE 30, 1999

AGE NEAREST BIRTHDAY	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS
15-19	0	0.00	0	0.00	0	0.00
20-24	0	0.00	1	163.11	1	163.11
25-29	6	894.59	1	399.19	7	1,293.78
30-34	21	4,813.63	1	155.39	22	4,969.02
35-39	22	7,908.27	3	602.24	25	8,510.51
40-44	24	10,621.72	4	1,536.44	28	12,158.16
45-49	17	7,104.86	3	940.54	20	8,045.40
50-54	12	4,538.09	1	190.29	13	4,728.38
55-59	8	2,165.12	1	70.89	9	2,236.01
60-64	0	0.00	0	0.00	0	0.00
65-69	1	198.57	1	301.18	2	499.75
70-74	0	0.00	0	0.00	0	0.00
75-79	0	0.00	0	0.00	0	0.00
80-84	0	0.00	0	0.00	0	0.00
85 +	0	0.00	1	0.77	1	0.77
TOTAL	111	38,244.85	17	4,360.04	128	42,604.89

COUNTY EMPLOYEES RETIREMENT SYSTEM
NONHAZARDOUS DUTY EMPLOYEE CLASSIFICATION
VESTED MEMBERSHIP SUMMARY
JUNE 30, 1999

AGE NEAREST BIRTHDAY	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	ACCUMULATED CONTRIBUTIONS	NUMBER	ACCUMULATED CONTRIBUTIONS	NUMBER	ACCUMULATED CONTRIBUTIONS
15-19	1,470	207,021.32	35	7,999.67	1,505	215,020.99
20-24	478	340,794.32	308	118,254.42	786	459,048.74
25-29	894	526,385.24	1,873	1,146,040.14	2,767	1,672,425.38
30-34	908	648,403.61	1,862	1,361,886.34	2,770	2,010,289.95
35-39	929	620,710.09	1,816	1,314,135.49	2,745	1,934,845.58
40-44	927	611,435.60	1,774	1,339,280.61	2,701	1,950,716.21
45-49	764	649,212.95	1,496	1,374,437.03	2,260	2,023,649.98
50-54	600	689,809.35	1,036	1,008,269.22	1,636	1,698,078.57
55-59	384	441,448.19	559	570,806.68	943	1,012,254.87
60-64	300	346,428.59	279	297,171.33	579	643,599.92
65-69	148	125,077.78	150	87,463.02	298	212,540.80
70-74	111	43,679.98	77	27,907.69	188	71,587.67
75-79	46	18,159.04	41	18,418.39	87	36,577.43
80-84	23	10,207.85	14	6,251.00	37	16,458.85
85 +	9	5,354.50	36	12,556.86	45	17,911.36
TOTAL	7,991	5,284,128.41	11,356	8,690,877.89	19,347	13,975,006.30

COUNTY EMPLOYEES RETIREMENT SYSTEM
HAZARDOUS DUTY EMPLOYEE CLASSIFICATION
VESTED MEMBERSHIP SUMMARY
JUNE 30, 1999

AGE NEAREST BIRTHDAY	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	ACCUMULATED CONTRIBUTIONS	NUMBER	ACCUMULATED CONTRIBUTIONS	NUMBER	ACCUMULATED CONTRIBUTIONS
15-19	42	5,984.41	0	0.00	42	5,984.41
20-24	19	18,842.97	2	662.35	21	19,505.32
25-29	66	80,703.50	11	21,438.07	77	102,141.57
30-34	66	112,503.83	10	6,349.16	76	118,852.99
35-39	42	72,935.47	7	1,506.97	49	74,442.44
40-44	24	40,543.98	5	3,178.81	29	43,722.79
45-49	16	75,702.89	3	44,438.00	19	120,140.89
50-54	9	20,444.09	1	365.39	10	20,809.48
55-59	4	14,940.65	0	0.00	4	14,940.65
60-64	3	8,867.31	0	0.00	3	8,867.31
65-69	0	0.00	0	0.00	0	0.00
70-74	1	221.21	0	0.00	1	221.21
75-79	0	0.00	0	0.00	0	0.00
80-84	0	0.00	0	0.00	0	0.00
85 +	0	0.00	0	0.00	0	0.00
TOTAL	292	451,690.31	39	77,938.75	331	529,629.06

SECTION VI

SUMMARY OF PRINCIPAL PLAN PROVISIONS

Effective Date

The state of Kentucky established the County Employees Retirement System in July, 1958. The plan benefits have been improved several times, most recently as of August 1, 1998.

Plan Year

A plan year is a twelve month period beginning on July 1.

Final Compensation

Final compensation is the average salary during the five highest paid fiscal years for nonhazardous positions. If the months of service credit during the highest five year period is less than forty-eight, one or more additional fiscal years shall be used. For hazardous positions, final compensation is the average salary during the three highest paid fiscal years.

Service

Service means the sum of prior service and current service as defined below:

- (a) Prior service is credited for regular full-time employment of at least 100 hours of work per month with a participating agency before July 1, 1958. In some instances prior service credit is granted for time spent in the military.
- (b) Current service is obtained for regular full-time employment which averages at least 100 hours of work per month with participating agencies after July 1, 1958. Current service credit may be granted for military service and educational leaves if special criteria are met.
- (c) Employers may elect to purchase up to 6 months additional service credit based on an employee's unused sick leave.

Eligibility

Any county or political subdivision or instrumentality, including school boards or urban county government may participate in the System upon approval by the Board. Membership in the system consists of:

- (a) all persons who become employees of a county after such county first participates,

- (b) all persons who are employees on the date a county first participates and who elect within thirty days to become members and make contributions.

Membership does not include employees of a county who are members of some other state, county, or local retirement system, supported in whole or in part by public funds.

Normal Retirement Date

A member may elect to retire upon: (1) attaining age 65 for non-hazardous positions, or attaining age 55 for hazardous positions, and (2) having contributed to the System. Upon completion of 27 years of service credit, 15 of which are current service for non-hazardous positions, or completion of 20 years of service credit for hazardous positions, a member may elect to retire with an unreduced benefit.

Early Retirement Date

A member may elect to retire before the normal retirement date at any time after: (1) for non-hazardous positions, attainment of age 55 and completion of 60 months of service credit at least 12 of which are current, or at any age after 25 years of service, or (2) for hazardous positions, attainment of age 50 and completion of 15 years of service credit.

Normal Retirement Benefits

For non-hazardous positions, upon attainment of age 65 and completion of 48 months of service, of which 12 months are current service, a monthly benefit equal to 2.20% of the member's final compensation multiplied by his service will be payable. For hazardous positions, a monthly benefit equal to 2.50% of the member's final compensation multiplied by his service will be payable upon attainment of age 55 and completion of 60 months of service of which 12 months are current service. A member, with less than 48 months for non-hazardous positions or 60 months for hazardous positions, who retires on or after the normal retirement date is entitled to a retirement allowance which pays the actuarial equivalent of twice the member's accumulated contributions for life.

Early Retirement Benefits

A member who elects early retirement is entitled to a monthly benefit reduced for each month by which the early retirement date precedes the first date on which the member would qualify for an unreduced benefit. If a non-hazardous position employee has 27 or more years of service credit, 15 of which are current, or a hazardous position employee has 20 or more years of service credit, an unreduced benefit is payable.

Disability Benefits

A member with 60 months of service, 12 of which must be current service, is entitled to a retirement allowance computed in the same manner as the normal retirement benefit with service and final compensation determined as of the disability date. Service credit shall be added on to total service for the period from the last day of paid employment to the 65th birthday (55th for members in a hazardous position) up to a maximum of service credited to the last day of paid employment. Except for members with 25 or more (20 or more for hazardous) years of service on the last day of paid employment, the maximum combined service credit (total service and added service) shall not exceed 25 years (20 years for hazardous members). For non-hazardous position employees with 25 or more years of service, additional years of service credit will be added up to maximum combined limit of 30, or actual service if greater. For hazardous position employees with 20 or more years of service credit, actual service will be used.

A member in a hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than 25% of the member's final monthly rate of pay plus 10% of his final monthly rate of pay for each dependent child. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay. A partial disability benefit may be payable to hazardous employees if the disability is not total and permanent. The disability will be reduced to a rate determined by the Board.

Death Benefits

If a member dies prior to retirement, but after 60 months of service, 12 of which are current and who is a contributing member, or after 12 years of service, one of which is current and who is not a contributing member, or after 48 months service if the member is age 65 or over, a benefit will be payable to the beneficiary based on the member's age, years of service and final compensation at the date of death. The benefit will be equal to the amount payable had the employee retired and elected a joint and 100% survivorship payment form.

If a member in a hazardous position dies in the line of duty and has a spouse as beneficiary, a \$5,000 lump sum payment will be made and a benefit of 25% of the member's final monthly rate of pay will be payable until death or remarriage. If the member in a hazardous position dies in the line of duty and has a dependent as beneficiary, a lump sum payment of \$10,000 will be made. Monthly payments shall be made for each dependent child equal to 10% of the member's final monthly rate of pay, but not greater than 40% of the member's final monthly rate of pay. The beneficiary of a hazardous duty member with 5 or more years of service, one of which is current, may elect a death benefit computed in the same manner as a non-hazardous employee using 2.50% rather than 2.20%.

Upon the death of a retired member, who had a minimum of 48 months of service credit, a death benefit of \$5,000 is payable.

Optional Forms of Payment

Joint and survivor annuities which provide a reduced benefit for the life of the member, with the benefit at the same or at a further reduced rate continuing after the member's death until the death of the designated beneficiary may be elected by the member prior to retirement. Other optional forms include a life annuity with 10, 15 or 20 years of payments guaranteed and a Social Security adjustment with or without survivor rights.

Contributions

Members contribute 5% of gross compensation (8% for hazardous positions). On each June 30, interest is credited at the rate to be determined by the Board on the accumulated contributions the member had in his account on the previous June 30. Upon termination a member may withdraw the contributions with interest, but will be entitled to no benefit payments.

Medical Insurance

Recipients of a retirement benefit may elect to participate in a voluntary hospital/medical group insurance plan for themselves as well as any beneficiaries or dependents. The cost of participation for any beneficiaries or dependents is borne by the retiree (except that dependents of hazardous position employees and legislators will have the same percentage paid by the system as the member). The retirement system will pay a portion of the cost of participation for the retiree based on years of service credit as follows:

Less than 4 years	0%
4 - 9 years	25%
10 - 14 years	50%
15 - 19 years	75%
20 or more years	100%

If a hazardous member is disabled in the line of duty, the retirement system will pay 100% of the cost of the member, spouse and eligible dependents. If a hazardous member is killed in the line of duty, the retirement system will pay 100% of the cost of the beneficiary and eligible dependents as long as they remain eligible for a monthly benefit payment.

Increase in Retirement Allowances

Effective August 1, 1996, and on July 1 of each year thereafter, a recipient of a retirement allowance shall have his retirement allowance increased by the percentage increase in the annual average of the consumer price index for all urban consumers for the most recent calendar year as published by the federal Bureau of Labor Statistics, not to exceed five percent (5%). In determining the annual employer contribution rate, only the cost of increases granted as of the most recent valuation date shall be recognized. The benefits of this subsection as provided on August 1, 1996 and thereafter shall not be considered as benefits protected by the inviolable contract provisions of KRS 61.692, 16.652, and 78.852. The General Assembly reserves the right to suspend or reduce the benefits conferred in this subsection if in their judgment the welfare of the Commonwealth so demands.

FORTY-FIRST ANNUAL ACTUARIAL VALUATION

JUNE 30, 1999

STATE POLICE RETIREMENT SYSTEM

FRANKFORT, KENTUCKY

SECTION I

INTRODUCTION

The results of the forty-first annual actuarial valuation of the State Police Retirement System are presented in this report. The actuarial valuation was made on the basis of the data provided by the System as of June 30, 1999.

The purpose of the actuarial valuation is to determine the actuarial condition of the Retirement System and the rate of employer contribution for the ensuing fiscal year as required to support the System.

The plan provisions utilized in this valuation are described in the Summary of Principal Plan Provisions in Section VI. The basis of funding is defined in KRS 61.565 and provides that the actuarial valuation method would be uniform for all benefits provided by the System. The Entry Age Normal Actuarial cost method has been used for all benefits. KRS 61.565 provides that each employer participating in the System shall contribute an amount equal to the Normal Cost contribution rate, and an amount sufficient to amortize the Unfunded Actuarial Accrued Liability over 30 years using the level-percentage-of-payroll method. This is the standard used herein to determine whether the funding of the System is adequate.

The actuarial valuation results are based upon the employee census and asset data supplied by the office of the System, and upon the actuarial assumptions as stated in Section II.

SECTION II

ACTUARIAL CONSIDERATIONS

Description of Actuarial Methods

The actuarial valuation is the means by which the contingent liabilities and contribution rates of a retirement system are evaluated and determined. It provides a guide to the System as to the financing required during years of active service to accumulate the funds needed to provide members' benefits. It also makes it possible to estimate beforehand the cost of proposed changes in the System so that action can be taken in the light of the cost consequences.

The methods of valuation are prescribed by KRS 61.565. The Entry Age Normal Cost Method was used to determine costs of all benefits with the exception of the retiree medical insurance benefit. Under this method the employer's contribution to the retirement system consists of Normal Cost, a payment to fund the Unfunded Actuarial Accrued Liability, medical insurance, and administrative expenses. The Normal Cost represents the contribution (as a level percent of payroll) that completely funds benefits at retirement if made from a person's entry into employment until his retirement. The Actuarial Accrued Liability represents the sum of money and investments that would be held in the fund if the retirement system had been in effect since the date each member was first employed. The payment to fund the Unfunded Actuarial Accrued Liability is the amount necessary to amortize this liability over 30 years using the "level-percentage-of-payroll" method. Under the "level-percentage-of-payroll" method, the amortization payment is an amount which remains constant as a percentage of payroll over the 30 years. The initial 30 year period began with the 1990 valuation. In each subsequent valuation, any change in Unfunded Actuarial Accrued Liability is identified and established as a separate amortization base with a 30 year funding period beginning with that valuation. The change in Unfunded Actuarial Accrued Liability established as a separate base in each valuation will include changes attributable to experience gains and/or losses over the prior year, as well as changes attributable to benefit improvements and revisions in actuarial assumptions and funding methods.

The medical insurance contribution rate was originally determined in the 1987 valuation as the level percent of payroll necessary to fund projected medical insurance premiums over the next sixteen years (taking into account the level of reserves in the Insurance Fund). Beginning in 1988, this rate is being increased each year by a percentage amount needed to reach the Entry Age Normal funding rate within a 20 year period measured from 1987. This was continued through the 1992 valuation. In the 1992 valuation, an acceleration of the scheduled increases in the medical insurance contribution rate was recommended where possible. This acceleration in these rates was coupled with a deferral of future increases until the time of the next experience study, unless there was a deterioration in the funded position of the medical premium benefit in which case the rate levels were to be reviewed to redetermine an appropriate current funding level, or unless recommended contributions are not made in the prior year, in which case the shortfall would be spread over future years through an increase in the contribution rate. This continued through the 1995 valuation. Effective with the 1996 valuation, a new

medical insurance funding policy was adopted by the Board. Under this revised policy, the medical insurance contribution rate for the 1996 valuation was set equal to the 1995 rate plus any reduction in the retirement and administrative expense rates between the 1995 and 1996 valuations (but in no event to be less than the 1995 medical insurance contribution rate). Beginning with the 1997 valuation, the medical insurance contribution rate is to be increased at the start of each biennium (coincides with valuations in odd numbered years) by the percentage amount necessary to raise this medical insurance rate to the full Entry Age Normal Cost Method contribution rate by the year 2016. There will be no changes in the even numbered years unless there are actuarial gains relative to the retirement funding which will then be used to increase the medical insurance funding rate for the next year only. In computing the full Entry Age Normal Cost Method contribution rate, liabilities are to be developed based on actuarial assumptions in use in the current valuation (as adjusted from time to time due to experience studies) and actuarial value of assets based on the same 5-year market to book value average methods as employed for the retirement benefit valuation. The actuarial value of assets for the medical contribution rate valuation utilized book value prior to the 1996 valuation.

The amount of the administrative expense was based on the budgeted amount for the twelve months following the date of the valuation

Actuarial Assumptions

Since the actuarial valuation involves estimates of benefits payable in the future, it is necessary that assumptions be made as to the interest earnings, rates of mortality, withdrawal, retirement, and disability, and the rate at which salaries will increase. In addition, an assumption must be made relative to increases in medical insurance premium rates in order to value the liability for the medical insurance benefit.

It is desirable that the actuarial assumptions be reviewed periodically to see whether past experience and probable future experience justifies the continued use of these actuarial assumptions. Such a study was performed subsequent to the 1995 actuarial valuation and new actuarial assumptions were adopted by the Board for use in the 1996 and subsequent actuarial valuations, until such time as another experience study is performed. This valuation reflects assumptions based on the 1995 experience study. The actuarial assumptions as used in this valuation are described later in this section.

Actuarial Value of Assets

The actuarial value of assets is determined in the following manner for the Retirement Fund:

1. Determine the ratio of the market value of Retirement Fund assets to book value as of the current valuation date and the four preceding valuation dates (but not using any valuation dates prior to June 30, 1989). All asset values include accrued investment income and member and employer contribution receivables, and exclude member refunds and investment expenses payable.
2. Determine the average ratio of market to book value as of these valuation dates.
3. Apply this average ratio to the book value (as adjusted for accrued investment income and member and employer contribution receivables, and member refunds and investment expenses payable) as of the current valuation date to derive valuation assets.

For the Insurance Fund, the revision in the asset valuation method was deferred until the 1996 valuation. Prior to that time, the actuarial value of assets continued to be determined based on the book value of the assets in that fund as of the valuation date adjusted for any receivables and/or payables.

The different asset valuation methods for the Retirement Fund and the Insurance Fund for the 1990 through 1995 valuations were a result of the following:

1. There was separate book and market value information for the Insurance Fund under all systems dating only from July, 1992. So it was not possible to use the same averaging method for the Insurance Fund as used for the Retirement Fund until sufficient years of separate information were developed.
2. The magnitude of assets to liabilities for the Insurance Fund was such that the method of valuing assets would only negligibly affect valuation results. Also, given the method then in use for transitioning into higher medical premium contribution rates over future years, the asset valuation method used for the Insurance Fund was not as critical as the asset valuation method used for the Retirement Fund.

However, effective with the 1996 valuation, there was sufficient historical information to allow use of the same asset valuation method for the Insurance Fund as that used for the Retirement Fund since 1990. Accordingly, the Board adopted this change in asset valuation method for the Insurance Fund effective with the 1996 valuation.

The tables below show derivation of valuation assets for the Retirement Fund and the Insurance Fund as of the current valuation:

RETIREMENT FUND - NON HAZARDOUS			
Valuation Date	Book Value	Market Value	Ratio
June 30, 1999	247,112,421	406,593,722	164.53795%
June 30, 1998	227,538,493	363,317,572	159.67301%
June 30, 1997	220,760,387	307,028,266	139.07761%
June 30, 1996	191,834,195	257,798,981	134.38635%
June 30, 1995	180,382,515	227,154,505	125.92934%
Average Ratio			144.72085%
Valuation Assets (Average Ratio x Current Book Value)			357,623,196

INSURANCE FUND - NON HAZARDOUS			
Valuation Date	Book Value	Market Value	Ratio
June 30, 1999	42,939,830	60,487,821	140.86647%
June 30, 1998	35,278,810	49,418,196	140.07898%
June 30, 1997	30,587,285	38,594,523	126.17832%
June 30, 1996	25,737,968	28,880,610	112.21014%
June 30, 1995	21,200,195	23,031,079	108.63617%
Average Ratio			125.59402%
Valuation Assets (Average Ratio x Current Book Value)			53,929,859

Note: Book and market values reflect accrued investment income and member and employer contribution receivables, member refunds and investment expenses payable.

A. STATEMENT OF ACTUARIAL ASSUMPTIONS

- (1) Mortality:
 - (a) Active & retired lives - 1983 Group Annuity Mortality Table, plus a pre-retirement duty death rate of .0005 per year.
 - (b) Disabled lives - Social Security Administration Disability Mortality Rates - Actuarial Study No. 75 (current rates used by PBGC for disabled lives receiving Social Security).
- (2) Disablement - Graduated rates based on 1995 experience study.
- (3) Termination of employment - Graduated rates based on 1995 experience study.
- (4) Retirement - 60% will retire as soon as eligible for unreduced benefits and balance will continue to age 55.
- (5) Marital status
 - (a) Percentage married - 100%.
 - (b) Age difference - Males are assumed to be 3 years older than their spouses.
- (6) Dependent children - For duty related death benefits, it is assumed that the employee is survived by 2 dependent children, each age 6.
- (7) Investment return - 8.25% per year, net of investment related expenses, compounded annually.
- (8) Compensation progression - 6.50% per year, compounded annually.
- (9) Underlying Inflation Rate - 3.50% per year, reflected in investment return and compensation progression assumptions.

(10) Retiree Medical Insurance

- It was assumed that future retirees would select medical coverage in the same proportion that current retirees have selected coverage. Monthly premium rates were assumed to be as follows:

<u>Plan Type</u>	<u>Rate in Effect on Valuation Date</u>
Single	\$203.00
Family	450.00
Parent Plus	260.00
Couple	456.00
Medicare	96.90
High Option	176.62

In determining the target Entry Age Funding rate in valuations beginning with 1996, it was assumed that medical premiums would grow at the following annual rates:

<u>Years</u>	<u>Medical Increase</u>
1996 - 2005	10%
2006 - 2010	9%
2011 - 2015	8%
Thereafter	7.5%

The assumed rate of growth in number of retirees receiving medical insurance was based on assumed retirement and mortality patterns used throughout the valuation.

(11) Missing data

- For those active members with incomplete data, the following assumptions were made:
 - . If reported salary was zero or blank, then monthly salary was assumed to be \$2,216
 - . If reported age was blank, then assume current age equal to age 18 plus years of service reported

(12) Members with Multiple
Service Records

- For active members with service in more than one system, the liability has been valued as follows:
 - . Service under all systems is aggregated for purposes of determining benefit eligibility.
 - . Future service is projected only under the system in which the member is currently active.
 - . The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
 - . The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

B. SAMPLE RATES

(1) Annual Rates of Mortality:

<u>Age</u>	<u>Active Mortality*</u>		<u>Disabled Mortality</u>	
	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>
25	0.05%	0.03%	4.83%	2.63%
30	0.06%	0.03%	3.62%	2.37%
40	0.12%	0.07%	2.82%	2.09%
50	0.40%	0.16%	3.83%	2.57%
55	0.61%	0.25%	4.82%	2.95%
60	0.92%	0.42%	6.03%	3.31%

*Plus 0.05% duty death rate prior to retirement.

(2) Annual Rates of Decrement:

<u>Age</u>	<u>Disablement</u>	<u>Ultimate Termination</u>
25	0.042%	3.04%
30	0.050%	3.38%
40	0.132%	1.50%
50	0.530%	0.00%
55	0.992%	0.00%
60	1.743%	0.00%

(3) Compensation Progression:

<u>Age</u>	<u>Rate of Annual Increase</u>	<u>Compensation at Normal Retirement as Percentage Of Current Annual Compensation</u>
25	6.50%	661.4%
30	6.50%	482.8%
40	6.50%	257.2%
50	6.50%	137.0%

SECTION III

RESULTS OF THE 1999 ACTUARIAL VALUATION

Determination of Contribution Rate

The rate of contribution by the State required to provide 30 year amortization of the Unfunded Actuarial Accrued Liability under the level-percentage-of-payroll method, the employer share of the Normal Cost, medical insurance and the expenses of administration, is shown in Table I. The required contribution is expressed both in dollars and as a percentage of the estimated annual State payroll as of June 30, 1999.

The actuarial methods applied to determine the Normal Cost for the year commencing July 1, 1999 are described in Section II. These costs are classified by type of benefit. The Normal Cost contribution rate is determined by reducing the total Normal Cost by the expected employee contributions. A breakdown of actuarial liabilities and costs between Hazardous and Non-Hazardous position employees appears in Table II for the Retirement Fund and Table IV for the Insurance Fund. A breakdown of the total Unfunded Actuarial Accrued Liability into the amortization amounts by year is shown in Table III for the Retirement Fund and Table V for the Insurance Fund. Table VI has been included to show an estimate of projected payouts from the funds over the next 10 years based on current plan provisions and actuarial assumptions.

Actuarial Balance Sheet

Table VII is the actuarial balance sheet of the State Police Retirement System as of June 30, 1999 for the Retirement Fund. Table VIII is the actuarial balance sheet for the Insurance Fund. The "actuarial balance sheet" displays the fundamental relationship between actual assets, future contributions, and future benefits. The asset side of the balance sheet is comprised of actual fund assets plus the actuarial present value of future contributions on behalf of current members. The actuarial present values of all projected benefit payments to present active and inactive members make up the balance sheet liabilities.

Accountant's Information

Table IX contains additional information needed to comply with GASB disclosure requirements relative to the Retirement Fund.

Table X contains additional information needed to comply under GASB Statement No. 12 relative to the Insurance Fund.

TABLE I STATE POLICE RETIREMENT SYSTEM RETIREMENT AND INSURANCE FUND DETERMINATION OF CONTRIBUTION RATE - JUNE 30, 1999		
UNFUNDED ACTUARIAL ACCRUED LIABILITY - RETIREMENT FUND		
		Percent *
Total Actuarial Accrued Liability	\$ 314,021,673	774.43%
Assets at Actuarial Value	357,623,196	881.96%
Unfunded Actuarial Accrued Liability	\$ (43,601,523)	(107.53%)
Contribution - Payment on Unfunded Actuarial Accrued Liability	\$ (2,140,635)	(5.28%)
NORMAL COST - RETIREMENT FUND		
Retirement Benefits	\$ 5,637,617	13.92%
Disability Benefits	210,070	0.51%
Withdrawal Benefits (Vested and Refund of Contributions)	409,710	1.01%
Survivor Benefits	204,273	0.50%
Total Normal Cost	\$ 6,461,670	15.94%
Less: Employee Contributions	3,178,064	7.84%
Normal Cost - State	\$ 3,283,606	8.10%
TOTAL ANNUAL EMPLOYER COST - RETIREMENT AND INSURANCE FUND		
Normal Cost	\$ 3,283,606	8.10%
Payment on Unfunded Actuarial Accrued Liability	(2,140,635)	(5.28%)
Administrative Expense	249,816	0.62%
Group Hospital and Medical Insurance Premiums	7,355,523	18.14%
Total Annual Cost	\$ 8,748,310	21.58%
*Based on estimated annual salaries of	\$ 40,548,636	

<p align="center">TABLE II STATE POLICE RETIREMENT SYSTEM RETIREMENT FUND CLASSIFICATION OF ACTUARIAL LIABILITIES AND COSTS - JUNE 30, 1999</p>	
ACTUARIAL ACCRUED LIABILITY	
Active Members	
Retirement Benefits	\$ 120,445,394
Disability Benefits	2,433,816
Withdrawal Benefits (Vested and Refund of Contributions)	925,686
Survivor Benefits	3,053,671
Total - Actives	\$ 126,858,567
Inactive Members	
Retired Members and Beneficiaries	\$ 186,890,785
Vested Retirement	196,933
Vested Membership	75,388
Total - Inactives	\$ 187,163,106
Total Actuarial Accrued Liability	\$ 314,021,673
UNFUNDED ACTUARIAL ACCRUED LIABILITY	
Total Actuarial Accrued Liability	\$ 314,021,673
Less Actuarial Value of Assets	357,623,196
Unfunded Actuarial Accrued Liability	\$ (43,601,523)
NORMAL COST	
Retirement Benefits	\$ 5,637,617
Disability Benefits	210,070
Withdrawal Benefits (Vested and Refund of Contributions)	409,710
Survivor Benefits	204,273
Total Normal Cost	\$ 6,461,670
Less Employee Contributions	3,178,064
Total Normal Cost - State	\$ 3,283,606
ACCRUED BENEFIT LIABILITY *	
Total	\$ 255,751,271
* Present value of accrued benefits deferred to normal retirement date.	

TABLE III

STATE POLICE RETIREMENT SYSTEM

UNFUNDED ACTUARIAL ACCRUED LIABILITY - RETIREMENT FUND - JUNE 30, 1999

Date Established	Amount of Base on		Amortization Payment	Source of Base
	Date Established	Current Valuation Date		
6/30/1990	\$ 8,982,071	\$ 10,935,871	\$ 694,472	Cumulative unfunded actuarial accrued liability set up as initial base under revised funding policy (30 year level percent of payroll method)
6/30/1991	9,963,656	11,950,742	734,325	Experience gains/losses for 7/1/90 to 6/30/91
6/30/1992	(24,502,117)	(28,894,223)	(1,721,344)	Experience gains/losses for 7/1/91 to 6/30/92; Retiree COLA's; Asset valuation method change
6/30/1993	(3,706,436)	(4,289,455)	(248,205)	Experience gains/losses for 7/1/92 to 6/30/93; State contribution shortfall
6/30/1994	10,380,135	11,769,551	662,590	Experience gains/losses for 7/1/93 to 6/30/94; Retiree COLA's; State contribution shortfall
6/30/1995	22,729,292	25,210,773	1,382,962	Experience gains/losses for 7/1/94 to 6/30/95
6/30/1996	(17,793,855)	(19,279,612)	(1,031,961)	Experience gains/losses for 7/1/95 to 6/30/96; Revised actuarial assumptions
6/30/1997	(31,021,470)	(32,763,510)	(1,713,433)	Experience gains/losses for 7/1/96 to 6/30/97; 2.8% retiree COLA effective 8/1/96
6/30/1998	12,716,788	13,076,264	668,956	Experience gains/losses for 7/1/97 to 6/30/98; Revised average salary definition from 5 years to 3 years; Increase in death benefit from \$2,500 to \$5,000; 3.0% retiree COLA effective 7/1/97
6/30/1999	(31,317,924)	(31,317,924)	(1,568,997)	Experience gains/losses for 7/1/98 to 6/30/99; 2.3% retiree COLA effective 7/1/98
Total	\$ (43,569,860)	\$ (43,601,523)	\$ (2,140,635)	

TABLE IV STATE POLICE RETIREMENT SYSTEM INSURANCE FUND DETERMINATION OF ENTRY AGE CONTRIBUTION RATE - JUNE 30, 1999	
ACTUARIAL ACCRUED LIABILITY	
Active Members	\$ 60,163,202
Inactive Members	
Retired Members	\$ 56,397,134
Beneficiaries	8,796,821
Vested Retirement	439,993
Vested Membership	0
Total - Inactives	\$ 65,633,948
Total Actuarial Accrued Liability	\$ 125,797,150
UNFUNDED ACTUARIAL ACCRUED LIABILITY	
Total Actuarial Accrued Liability	\$ 125,797,150
Less Actuarial Value of Assets	53,929,859
Unfunded Actuarial Accrued Liability	\$ 71,867,291
NORMAL COST	
Gross Normal Cost	\$ 5,313,370
Less Employee Contributions	0
Net Normal Cost - State	\$ 5,313,370
Estimated Annual Salaries	\$ 40,548,636
TOTAL ANNUAL EMPLOYER COST	
Contribution Amount	
Normal Cost	\$ 5,313,370
Payment on Unfunded Actuarial Accrued Liability	3,888,613
Total Annual Cost	\$ 9,201,983
As Percent of Payroll	
Normal Cost	13.10%
Payment on Unfunded Actuarial Accrued Liability	9.59%
Total Annual Cost	22.69%
INSURANCE FUND SHORTFALL	
Full Entry Age Funding Level	22.69%
Current Funding Allocation *	18.14%
Additional to Pick Up By 2016	4.55%
Expected Increase in Insurance Fund Rate in 2001 Valuation	0.23%
* Without regard to special adjustment for actuarial gains in even numbered valuation years	

TABLE V
STATE POLICE RETIREMENT SYSTEM
UNFUNDED ACTUARIAL ACCRUED LIABILITY - INSURANCE FUND - JUNE 30, 1999

Date Established	Amount of Base on		Amortization Payment	Source of Base
	Date Established	Current Valuation Date		
6/30/1996	\$ 73,323,619	\$ 79,446,014	\$ 4,252,427	Cumulative unfunded actuarial accrued liability set up as initial base under revised funding policy (30 year level percent of payroll method)
6/30/1997	8,088,952	8,543,196	446,784	Experience gains/losses for 7/1/96 to 6/30/97; Impact of actual insurance fund contributions vs. full entry age amounts
6/30/1998	(2,668,212)	(2,743,636)	(140,359)	Experience gains/losses for 7/1/97 to 6/30/98; Impact of actual insurance fund contributions vs. full entry age amounts
6/30/1999	(13,378,283)	(13,378,283)	(670,239)	Experience gains/losses for 7/1/98 to 6/30/99; Impact of actual insurance fund contributions vs. full entry age amounts
Total	\$ 65,366,076	\$ 71,867,291	\$ 3,888,613	

TABLE VI	
STATE POLICE RETIREMENT SYSTEM	
BENEFIT PAYMENT PROJECTIONS	
RETIREMENT FUND PAYMENT PROJECTIONS	
Plan Year	Total
7/1/1999 to 6/30/2000	20,508,000
7/1/2000 to 6/30/2001	21,463,000
7/1/2001 to 6/30/2002	22,906,000
7/1/2002 to 6/30/2003	24,894,000
7/1/2003 to 6/30/2004	26,516,000
7/1/2004 to 6/30/2005	28,712,000
7/1/2005 to 6/30/2006	30,656,000
7/1/2006 to 6/30/2007	33,525,000
7/1/2007 to 6/30/2008	36,034,000
7/1/2008 to 6/30/2009	39,317,000
INSURANCE FUND PAYMENT PROJECTIONS	
Plan Year	Total
7/1/1999 to 6/30/2000	3,355,000
7/1/2000 to 6/30/2001	3,680,000
7/1/2001 to 6/30/2002	4,106,000
7/1/2002 to 6/30/2003	4,669,000
7/1/2003 to 6/30/2004	5,264,000
7/1/2004 to 6/30/2005	5,968,000
7/1/2005 to 6/30/2006	6,693,000
7/1/2006 to 6/30/2007	7,630,000
7/1/2007 to 6/30/2008	8,486,000
7/1/2008 to 6/30/2009	9,554,000
<p>Projected benefit payments reflect future actual experience consistent with actuarial assumptions used in current annual valuation. Future cost-of-living adjustments of 3% per annum have been assumed in retirement benefit amounts. Insurance fund payments reflect future medical inflation rates consistent with the valuation assumption. There has not been any assumption made as to the number of future new entrants who may enter the plan. Nor has any provision been made for any change in the basic benefit structure of the plan beyond changes already legislated.</p>	

TABLE VII STATE POLICE RETIREMENT SYSTEM RETIREMENT FUND ACTUARIAL BALANCE SHEET -- JUNE 30, 1999		
ACTUARIAL ASSETS		
Fund Assets at Actuarial Value (Plus Refunds and Expenses Payable) *		\$ 358,370,382
Actuarial Present Value of Future Member Contributions		28,972,516
Actuarial Present Value of Future Employer Contributions		
For Normal Costs	\$ 30,069,638	
For Unfunded Actuarial Accrued Liability	(43,601,523)	
Total		\$ (13,531,885)
Total Actuarial Assets		\$ 373,811,013
ACTUARIAL LIABILITIES		
Actuarial Present Value of Future Benefits		
Inactive Members:		
Retired Members and Beneficiaries	\$ 186,890,785	
Vested Retirement	196,933	
Vested Membership	75,388	
Total - Inactive		\$ 187,163,106
Actuarial Present Value of Future Benefits		
Active Members:		
Retirement Benefits	\$ 171,976,753	
Disability Benefits	4,347,023	
Withdrawal Benefits (Vested and Refund of Contributions)	4,674,780	
Survivor Benefits	4,902,165	
Total - Active		\$ 185,900,721
Refunds and Expenses Payable		\$ 747,186
Total Actuarial Liabilities		\$ 373,811,013
ACCRUED BENEFIT LIABILITY **		
Total		\$ 255,751,271
Notes		
* Values as of June 30, 1999		
Market value of assets:		\$ 406,593,722
Actuarial value of assets:		\$ 357,623,196
Member's Contribution Account:		\$ 33,632,994
** Present value of accrued benefit deferred to normal retirement date.		

TABLE VIII STATE POLICE RETIREMENT SYSTEM INSURANCE FUND ACTUARIAL BALANCE SHEET -- JUNE 30, 1999		
ACTUARIAL ASSETS		
Fund Assets at Actuarial Value (Plus Refunds and Expenses Payable) *		\$ 53,939,445
Actuarial Present Value of Future Member Contributions (Note: All Future Member Contributions Credited Against Retirement Fund)		0
Actuarial Present Value of Future Employer Contributions		
For Normal Costs	\$ 53,651,007	
For Unfunded Actuarial Accrued Liability	71,867,291	
Total		\$ 125,518,298
Total Actuarial Assets		\$ 179,457,743
ACTUARIAL LIABILITIES		
Actuarial Present Value of Future Benefits		
Inactive Members:		
Retired Members and Beneficiaries	\$ 65,193,955	
Vested Retirement	439,993	
Vested Membership	0	
Total - Inactive		\$ 65,633,948
Actuarial Present Value of Future Benefits		
Active Members:		\$ 113,814,209
Refunds and Expenses Payable		\$ 9,586
Total Actuarial Liabilities		\$ 179,457,743
Notes		
* Values as of June 30, 1999		
Market value of assets:		\$ 60,487,821
Actuarial value of assets:		\$ 53,929,859

TABLE IX STATE POLICE RETIREMENT SYSTEM ACCOUNTANT'S INFORMATION - RETIREMENT FUND - JUNE 30, 1999 GASB DISCLOSURE INFORMATION	
NUMBER OF MEMBERS	
Inactive Members	
Retired Members	696
Beneficiaries	66
Vested Retirements	14
Vested Membership	72
Total Inactive Members	848
Active Members	
Vested Members	710
Nonvested Members	275
Total Active Members	985
Total Members	1,833

<p style="text-align: center;">TABLE X STATE POLICE RETIREMENT SYSTEM ACCOUNTANT'S INFORMATION - INSURANCE FUND - JUNE 30, 1999 INFORMATION REQUIRED UNDER GASB STATEMENT NO. 12</p>			
NUMBER OF MEMBERS			
Contracts in Force - Retirees and Dependents			
(1) Single;	-	100% Paid	156
Pre-Medicare	- 75% Paid		2
	- 50% Paid		2
	- 25% Paid		1
	- 0% Paid		0
(2) Family;	-	100% Paid	126
Pre-Medicare	- 75% Paid		0
	- 50% Paid		2
	- 25% Paid		0
	- 0% Paid		0
(3) Parent +;	-	100% Paid	28
Pre-Medicare	- 75% Paid		0
	- 50% Paid		1
	- 25% Paid		0
	- 0% Paid		0
(4) Couple;	-	100% Paid	218
Pre-Medicare	- 75% Paid		1
	- 50% Paid		1
	- 25% Paid		1
	- 0% Paid		0
(5) Medicare Regular	-	100% Paid	3
	- 75% Paid		0
	- 50% Paid		2
	- 25% Paid		0
	- 0% Paid		0
(6) Medicare High	-	100% Paid	244
Option	- 75% Paid		4
	- 50% Paid		2
	- 25% Paid		1
	- 0% Paid		1
Vested Retirements			14
Vested Membership			72
Active Members			985
UNFUNDED MEDICAL BENEFIT OBLIGATION			
Medical Benefit Obligation			
Retirees, Beneficiaries and Vested Terminated Members		\$	65,633,948
Active Members			60,163,202
Total Medical Benefit Obligation		\$	125,797,150
Net Assets at Actuarial Value		\$	53,929,859
Unfunded Medical Benefit Obligation		\$	71,867,291
NOTE: Medical Benefit Obligation based on Entry Age Normal Actuarial Cost Method			

SECTION IV

COMMENTS AND CERTIFICATION

Comments

For the Retirement Fund, the total Actuarial Accrued Liability has increased from \$294,427,019 on June 30, 1998 to \$314,021,673 on June 30, 1999. The Unfunded Actuarial Accrued Liability has decreased from (\$11,891,899) to (\$43,601,523). Total actuarial value of assets as of June 30, 1999 was equal to \$357,623,196. The Unfunded Actuarial Accrued Liability decreased from (33.16%) to (107.53%) as a percentage of annual payroll and decreased from (4.0%) to (13.9%) as a percentage of the Actuarial Accrued Liability in the year ended June 30, 1999.

For the Insurance Fund, the total Actuarial Accrued Liability has increased from \$124,501,076 on June 30, 1998 to \$125,797,150 on June 30, 1999. The Unfunded Actuarial Accrued Liability has decreased from \$83,090,576 to \$71,867,291. Total actuarial value of assets as of June 30, 1999 was equal to \$53,929,859. The Unfunded Actuarial Liability decreased from 66.7% to 57.1% as a percentage of the Actuarial Accrued Liability in the year ended June 30, 1999.

The change in contribution rate between the 1998 and 1999 valuations is a function of actual plan experience since the last valuation. A formal gain and loss analysis would identify the portion of the contribution rate change attributable to each element of plan experience and benefit change. However, undertaking such an analysis would be extremely time consuming and expensive. In lieu of the formal analysis, we have estimated the impact of the various components of gain and loss based on changes in statistical averages of each group. The following table shows the results of this computation:

June 30, 1998 Contribution Rate	25.26%
Change in Payment Percentage Due to Covered Payroll Experience	0.11%
Investment Return	(5.33%)
Salary Increases	1.40%
Decrements Experience*	(0.47%)
Change in Insurance Fund Rate	0.24%
Change in Administrative Expense Rate	(0.15%)
Retiree COLA effective 7/1/98	0.52%
Legislated Changes	N/A
June 30, 1999 Contribution Rate	21.58%
* Includes mortality, disability, termination of employment and retirement experience.	

The annual State contribution rate required to provide the Normal Cost, 30 year amortization of the Unfunded Actuarial Accrued Liability under the level-percentage-of-payroll method, and pay administrative expenses is 3.44%. An additional 18.14% is required to fund medical insurance for retirees, bringing the required contribution up to 21.58%. This is less than the current 25.26% budgeted contribution rate. Therefore, it is our opinion that the contribution rate beginning July 1, 2000 should be adjusted to the 21.58% level, and we so recommend.

The recommended contribution rates are based on current statutory benefits. The budgeted contribution rates will again be reviewed in the June 30, 2000 valuation.

The following table shows the total Actuarial Accrued Liability, the Unfunded Actuarial Accrued Liability, percent unfunded and the growth of the invested assets relative to retirement related benefits at selected intervals since the inception of the System.

STATE POLICE RETIREMENT SYSTEM - RETIREMENT FUND					
July 1 of Year Shown	Total Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Percent Unfunded	Actuarial Value of Assets	Increase in Assets
1958	\$ 1,450,000	\$ 1,450,000	100.0%	\$ 0	\$ 0
1963	4,553,258	2,008,476	44.1%	2,544,782	619,167
1968	9,079,139	3,288,103	36.2%	5,791,036	789,709
1971	11,828,727	2,441,888	20.6%	9,386,839*	1,339,726
1974	17,737,434	3,179,448	17.9%	14,557,986*	1,935,105
1975	23,182,081	6,169,445	26.6%	17,012,636*	2,454,650
1976	28,693,129	8,231,367	28.7%	20,461,762*	3,449,126
1977	34,561,413	10,436,161	30.2%	24,125,252*	3,663,490
1978	49,950,102	21,440,957	42.9%	28,509,145*	4,383,893
1979	55,391,206	21,487,985	38.8%	33,903,221*	5,394,076
1980	67,580,562	26,663,397	39.5%	40,917,165*	7,013,944
1981	71,526,728	23,296,425	32.6%	48,230,303	7,313,138
1982	78,713,172	21,383,042	27.2%	57,330,130	9,099,827
1983	81,944,546	16,187,460	19.8%	65,757,086	8,426,956
1984	91,180,668	16,200,151	17.8%	74,980,517	9,223,431
1985	99,269,825	14,253,583	14.4%	85,016,242	10,035,725
1986	105,559,951	8,892,252	8.4%	96,667,699	11,651,457
1987	111,541,989	1,347,385	1.2%	110,194,604	13,526,905
1988	120,128,367	(870,182)	(0.8%)	120,998,549	10,803,945
1989	134,550,773	3,200,220	2.4%	131,350,553	10,352,004
1990	154,007,622	8,982,071	5.8%	145,025,551	13,674,998
1991	170,009,955	19,191,881	11.3%	150,818,074	5,792,523
1992**	182,996,056	(4,794,955)	(2.6%)	187,791,011	36,972,937
1993	191,653,594	(8,667,374)	(4.5%)	200,320,968	12,529,957
1994	206,763,310	1,442,801	0.7%	205,320,509	4,999,541
1995	241,690,631	24,186,188	10.0%	217,504,443	12,183,934
1996	244,540,812	7,025,466	2.9%	237,515,346	20,010,903
1997	255,784,758	(23,858,517)	(9.3%)	279,643,275	42,127,929
1998	294,427,019	(11,891,899)	(4.0%)	306,318,918	26,675,643
1999	314,021,673	(43,601,523)	(13.9%)	357,623,196	51,304,278
*Includes capitalized appreciation of investments.					
**Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.					

The following table shows the total Actuarial Accrued Liability, the Unfunded Actuarial Accrued Liability, percent unfunded and the growth of the invested assets relative to medical premium benefits since 1990.

STATE POLICE RETIREMENT SYSTEM - INSURANCE FUND					
July 1 of Year Shown	Total Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Percent Unfunded	Actuarial Value of Assets	Increase in Assets
1990	\$ 64,784,801	\$ 58,268,284	89.9%	\$ 6,516,517	\$ N/A
1991	74,163,248	65,231,704	88.0%	8,931,544	2,415,027
1992	88,407,634	76,689,678	86.7%	11,717,956	2,786,412
1993	95,290,099	81,004,620	85.0%	14,285,479	2,567,523
1994	110,193,139	92,782,467	84.2%	17,410,672	3,125,193
1995	118,995,732	97,795,537	82.2%	21,200,195	3,789,523
1996**	101,132,886	73,323,619	72.5%	27,809,267	6,609,072
1997	117,361,754	83,485,271	71.1%	33,876,483	6,067,216
1998	124,501,076	83,090,576	66.7%	41,410,500	7,534,017
1999	125,797,150	71,867,291	57.1%	53,929,859	12,519,359
**Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.					

Certification

On the basis of the actuarial assumptions given and the data furnished by the General Manager of the State Police Retirement System, it is certified that the actuarial valuation has been made by the use of accepted actuarial principles and that adequate provision is being made for the funding of future benefits.

I, Stephen A. Gagel, am a Fellow of the Society of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

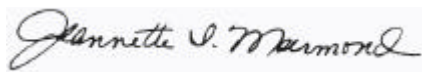


Stephen A. Gagel, F.S.A.

October 29, 1999

Date

I, Jeannette I. Moermond, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



Jeannette I. Moermond

October 29, 1999

Date

William M. Mercer, Incorporated
462 South Fourth Avenue, Suite 1500
Louisville, Kentucky 40202-3431
①(502) 561-4500

SECTION V
STATISTICAL DATA
AS OF
JUNE 30, 1999

STATE POLICE RETIREMENT SYSTEM
JUNE 30, 1999

EARNINGS BY AGE GROUPS

AGE GROUP	.....MALE.....			.....FEMALE.....			.....TOTAL.....		
	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE
0-19	3	49,104	16,368	0	0	0	3	49,104	16,368
20-24	19	466,596	24,558	2	24,780	12,390	21	491,376	23,399
25-29	183	5,665,344	30,958	13	374,856	28,835	196	6,040,200	30,817
30-34	189	6,708,456	35,494	8	269,304	33,663	197	6,977,760	35,420
35-39	177	7,073,256	39,962	9	339,324	37,703	186	7,412,580	39,853
40-44	134	5,826,996	43,485	5	215,148	43,030	139	6,042,144	43,469
45-49	144	7,638,288	53,044	0	0	0	144	7,638,288	53,044
50-54	86	5,074,344	59,004	0	0	0	86	5,074,344	59,004
55-59	13	822,840	63,295	0	0	0	13	822,840	63,295
60-64	0	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0	0
TOTAL	948	39,325,224	41,482	37	1,223,412	33,065	985	40,548,636	41,166

EARNINGS BY SERVICE GROUPS

SERVICE GROUP	.....MALE.....			.....FEMALE.....			.....TOTAL.....		
	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE	COUNT	EARNINGS	AVERAGE
0	52	1,148,580	22,088	6	112,488	18,748	58	1,261,068	21,743
1	2	56,592	28,296	0	0	0	2	56,592	28,296
2	66	1,905,744	28,875	7	190,536	27,219	73	2,096,280	28,716
3	56	1,762,068	31,466	1	29,160	29,160	57	1,791,228	31,425
4	43	1,448,100	33,677	1	32,304	32,304	44	1,480,404	33,646
0-4	219	6,321,084	28,863	15	364,488	24,299	234	6,685,572	28,571
5-9	199	7,183,068	36,096	12	441,792	36,816	211	7,624,860	36,137
10-14	164	6,758,736	41,212	4	158,796	39,699	168	6,917,532	41,176
15-19	111	4,816,428	43,391	5	203,556	40,711	116	5,019,984	43,276
20-24	120	6,097,368	50,811	1	54,780	54,780	121	6,152,148	50,844
25-29	97	5,637,312	58,117	0	0	0	97	5,637,312	58,117
30-34	34	2,238,180	65,829	0	0	0	34	2,238,180	65,829
35-39	4	273,048	68,262	0	0	0	4	273,048	68,262
40+	0	0	0	0	0	0	0	0	0
TOTAL	948	39,325,224	41,482	37	1,223,412	33,065	985	40,548,636	41,166

STATE POLICE RETIREMENT SYSTEM
JUNE 30, 1999

SERVICE GROUPS BY AGE GROUPS

MALE

AGE GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	3									3
20-24	19									19
25-29	140	43								183
30-34	42	112	35							189
35-39	13	41	94	28	1					177
40-44	2	2	34	72	24					134
45-49				11	79	54				144
50-54			1		16	40	28	1		86
55-59		1				3	6	3		13
60-64										0
65-69										0
70-74										0
75+										0
TOTAL	219	199	164	111	120	97	34	4	0	948

FEMALE

AGE GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19										0
20-24	2									2
25-29	9	4								13
30-34	2	6								8
35-39	2	2	3	2						9
40-44			1	3	1					5
45-49										0
50-54										0
55-59										0
60-64										0
65-69										0
70-74										0
75+										0
TOTAL	15	12	4	5	1	0	0	0	0	37

TOTAL

AGE GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	3									3
20-24	21									21
25-29	149	47								196
30-34	44	118	35							197
35-39	15	43	97	30	1					186
40-44	2	2	35	75	25					139
45-49				11	79	54				144
50-54			1		16	40	28	1		86
55-59		1				3	6	3		13
60-64										0
65-69										0
70-74										0
75+										0
TOTAL	234	211	168	116	121	97	34	4	0	985

STATE POLICE RETIREMENT SYSTEM
JUNE 30, 1999

AVERAGE EARNINGS FOR SERVICE GROUPS BY AGE GROUPS

AGE GROUP	SERVICE GROUP									
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	3									3
	16,368									16,368
20-24	21									21
	23,399									23,399
25-29	149	47								196
	29,389	35,346								30,817
30-34	44	118	35							197
	28,895	36,332	40,550							35,420
35-39	15	43	97	30	1					186
	29,002	36,564	41,135	45,599	47,244					39,853
40-44	2	2	35	75	25					139
	29,862	35,520	42,006	42,613	49,808					43,469
45-49				11	79	54				144
				41,457	51,508	57,650				53,044
50-54			1		16	40	28	1		86
			38,016		49,411	58,484	65,906	61,044		59,004
55-59		1				3	6	3		13
		33,180				61,616	65,468	70,668		63,295
60-64										0
65-69										0
70-74										0
75+										0
TOTAL	234	211	168	116	121	97	34	4	0	985
	28,571	36,137	41,176	43,276	50,844	58,117	65,829	68,262		41,166
TOTAL EARNINGS		40,548,636								
AVERAGE AGE			37.37							
AVERAGE SERVICE			12.48							
Note: Earnings shown in this matrix have not been limited by 401(a)(17).										

Note: Earnings shown in this matrix have not been limited by 401(a)(17).

STATE POLICE RETIREMENT SYSTEM
 TABULATION BY MONTHLY SALARY
 JUNE 30, 1999

MONTHLY SALARY		NUMBER OF MEMBERS		
		MALES	FEMALES	TOTAL
UNDER	\$ 500	1	1	2
\$ 500 -	\$ 749	0	0	0
\$ 750 -	\$ 999	0	0	0
\$1,000 -	\$1,249	1	0	1
\$1,250 -	\$1,499	0	0	0
\$1,500 -	\$1,749	0	0	0
\$1,750 -	\$1,999	43	6	49
\$2,000 -	\$2,249	9	0	9
\$2,250 -	\$2,499	62	7	69
\$2,500 -	\$2,749	83	3	86
\$2,750 -	\$2,999	129	4	133
\$3,000 -	\$3,499	239	14	253
\$3,500 -	\$3,999	150	1	151
\$4,000 -	\$4,499	90	0	90
\$4,500 -	\$4,999	76	1	77
\$5,000 -	\$5,499	37	0	37
\$5,500 -	\$5,999	17	0	17
\$6,000 -	\$6,499	6	0	6
\$6,500 -	\$6,999	4	0	4
\$7,000 -	\$7,499	0	0	0
\$7,500 AND OVER		1	0	1
TOTAL		948	37	985
HIGHLY COMPENSATED EMPLOYEES (ESTIMATED)				
ANNUAL SALARY OF \$66,000 AND OVER		2	0	2

STATE POLICE RETIREMENT SYSTEM
MEMBERS WITH SERVICE IN ANOTHER SYSTEM
JUNE 30, 1999

MEMBERS CURRENTLY ACTIVE IN SPRS			
<u>SERVICE IN</u>	<u>ACTIVE IN OTHER SYSTEM</u>	<u>INACTIVE IN OTHER SYSTEM</u>	<u>TOTAL</u>
KERS - NONHAZARDOUS	1	105	106
KERS - HAZARDOUS	0	15	15
CERS - NONHAZARDOUS	4	69	73
CERS - HAZARDOUS	1	60	61
TOTAL - ALL SYSTEMS	6	249	255

MEMBERS CURRENTLY NOT ACTIVE IN SPRS			
<u>SERVICE IN</u>	<u>ACTIVE IN OTHER SYSTEM</u>	<u>INACTIVE IN OTHER SYSTEM</u>	<u>TOTAL</u>
KERS - NONHAZARDOUS	12	8	20
KERS - HAZARDOUS	6	2	8
CERS - NONHAZARDOUS	17	12	29
CERS - HAZARDOUS	50	4	54
TOTAL - ALL SYSTEMS	85	26	111

NOTE: DOES NOT INCLUDE INDIVIDUALS IN PAY STATUS IN OTHER SYSTEMS

STATE POLICE RETIREMENT SYSTEM
 RETIRED LIVES SUMMARY
 JUNE 30, 1999

	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS
BASIC FORM	61	134,143.75	5	3,758.47	66	137,902.22
STRAIGHT LIFE (OLD PLAN)	0	0.00	0	0.00	0	0.00
JOINT & SURVIVOR						
100% TO BENEFICIARY	104	210,857.50	1	866.27	105	211,723.77
66-2/3% TO BENEFICIARY	53	139,966.58	0	0.00	53	139,966.58
50% TO BENEFICIARY	54	128,009.67	1	1,037.58	55	129,047.25
POP-UP OPTION	131	300,305.31	1	508.00	132	300,813.31
10 YEARS CERTAIN	5	8,811.54	1	753.25	6	9,564.79
10 YEARS CERTAIN & LIFE	22	53,187.89	0	0.00	22	53,187.89
SOCIAL SECURITY OPTION						
OPTION C	34	73,268.34	1	1,651.85	35	74,920.19
OPTION D	166	352,156.96	5	3,611.99	171	355,768.95
OPTION E	0	0.00	0	0.00	0	0.00
OPTION F	0	0.00	0	0.00	0	0.00
DEPENDENT CHILD	9	2,353.02	8	2,365.49	17	4,718.51
REFUND	0	0.00	0	0.00	0	0.00
15 YEARS CERTAIN & LIFE	10	19,774.70	0	0.00	10	19,774.70
20 YEARS CERTAIN & LIFE	22	45,196.96	2	817.06	24	46,014.02
5 YEARS ONLY	0	0.00	0	0.00	0	0.00
TOTAL	671	1,468,032.22	25	15,369.96	696	1,483,402.18

STATE POLICE RETIREMENT SYSTEM
BENEFICIARY SUMMARY
JUNE 30, 1999

	MALE LIVES		FEMALE LIVES		TOTAL	
	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS	NUMBER	MONTHLY BENEFITS
BASIC FORM	0	0.00	0	0.00	0	0.00
STRAIGHT LIFE (OLD PLAN)	0	0.00	0	0.00	0	0.00
JOINT & SURVIVOR						
100% TO BENEFICIARY	3	4,145.76	42	78,281.42	45	82,427.18
66-2/3% TO BENEFICIARY	0	0.00	1	1,142.73	1	1,142.73
50% TO BENEFICIARY	1	975.85	6	8,526.95	7	9,502.80
POP-UP OPTION	0	0.00	3	6,886.04	3	6,886.04
10 YEARS CERTAIN	0	0.00	0	0.00	0	0.00
10 YEARS CERTAIN & LIFE	0	0.00	0	0.00	0	0.00
SOCIAL SECURITY OPTION						
OPTION C	0	0.00	0	0.00	0	0.00
OPTION D	0	0.00	4	7,842.48	4	7,842.48
OPTION E	0	0.00	0	0.00	0	0.00
OPTION F	0	0.00	0	0.00	0	0.00
DEPENDENT CHILD	3	842.32	0	0.00	3	842.32
REFUND	0	0.00	0	0.00	0	0.00
15 YEARS CERTAIN & LIFE	1	2,926.59	0	0.00	1	2,926.59
20 YEARS CERTAIN & LIFE	0	0.00	2	7,114.46	2	7,114.46
5 YEARS ONLY	0	0.00	0	0.00	0	0.00
TOTAL	8	8,890.52	58	109,794.08	66	118,684.60

STATE POLICE RETIREMENT SYSTEM

VESTED RETIREMENT SUMMARY

JUNE 30, 1999

AGE NEAREST BIRTHDAY	MALE LIVES		FEMALE LIVES		TOTAL	
	MONTHLY		MONTHLY		MONTHLY	
	NUMBER	BENEFITS	NUMBER	BENEFITS	NUMBER	BENEFITS
15-19	0	0.00	0	0.00	0	0.00
20-24	0	0.00	0	0.00	0	0.00
25-29	1	523.65	0	0.00	1	523.65
30-34	4	1,454.51	1	279.99	5	1,734.50
35-39	4	1,948.13	0	0.00	4	1,948.13
40-44	2	643.09	0	0.00	2	643.09
45-49	1	542.39	0	0.00	1	542.39
50-54	1	453.66	0	0.00	1	453.66
55-59	0	0.00	0	0.00	0	0.00
60-64	0	0.00	0	0.00	0	0.00
65-69	0	0.00	0	0.00	0	0.00
70-74	0	0.00	0	0.00	0	0.00
75-79	0	0.00	0	0.00	0	0.00
80-84	0	0.00	0	0.00	0	0.00
85 +	0	0.00	0	0.00	0	0.00
TOTAL	13	5,565.43	1	279.99	14	5,845.42

STATE POLICE RETIREMENT SYSTEM
VESTED MEMBERSHIP SUMMARY
JUNE 30, 1999

AGE NEAREST BIRTHDAY	MALE LIVES		FEMALE LIVES		TOTAL	
	ACCUMULATED		ACCUMULATED		ACCUMULATED	
	NUMBER	CONTRIBUTIONS	NUMBER	CONTRIBUTIONS	NUMBER	CONTRIBUTIONS
15-19	7	2,073.19	0	0.00	7	2,073.19
20-24	3	1,621.56	0	0.00	3	1,621.56
25-29	17	90,014.94	1	293.84	18	90,308.78
30-34	16	39,753.07	1	21.47	17	39,774.54
35-39	16	24,154.51	2	2,673.61	18	26,828.12
40-44	3	426.73	0	0.00	3	426.73
45-49	3	722.53	0	0.00	3	722.53
50-54	1	107.95	0	0.00	1	107.95
55-59	1	13,511.06	0	0.00	1	13,511.06
60-64	1	44,120.80	0	0.00	1	44,120.80
65-69	0	0.00	0	0.00	0	0.00
70-74	0	0.00	0	0.00	0	0.00
75-79	0	0.00	0	0.00	0	0.00
80-84	0	0.00	0	0.00	0	0.00
85 +	0	0.00	0	0.00	0	0.00
TOTAL	68	216,506.34	4	2,988.92	72	219,495.26

SECTION VI

SUMMARY OF PRINCIPAL PLAN PROVISIONS

Effective Date

The state of Kentucky established the State Police Retirement System in July, 1958. The plan benefits have been improved several times, most recently as of August 1, 1998.

Plan Year

A plan year is a twelve month period beginning on July 1.

Final Compensation

Final compensation is the average salary during the three highest paid fiscal years.

Service

Service means the sum of prior service and current service as defined below:

- (a) Prior service is credited for regular full-time employment of at least 100 hours of work per month with a participating agency before July 1, 1958. In some instances prior service credit is granted for time spent in the military.
- (b) Current service is obtained for regular full-time employment which averages at least 100 hours of work per month with participating agencies after July 1, 1958. Current service credit may be granted for military service and educational leaves if special criteria are met.
- (c) Service is increased by unused sick leave, up to a maximum of six months, for purposes of computing eligibility and the amount of benefits.

Eligibility

The Bureau of State Police shall participate in the System. Membership in the system consists of all regular full-time officers of the Kentucky State Police who are entitled to exercise the powers of police officers.

Normal Retirement Date

A member may elect to retire upon attaining age 55 and having contributed to the System. Upon completion of 20 years of service credit, 15 of which are current service, a member may declare the normal retirement date to be some date prior to age 55.

Early Retirement Date

A member may elect to retire before the normal retirement date at any time after attainment of age 50 and completion of 15 years of service credit.

Normal Retirement Benefits

A monthly benefit equal to 2.50% of the member's final compensation multiplied by his service will be payable upon attainment of age 55 and completion of 60 months of service of which 12 months are current service. A member who retires on or after the normal retirement date with less than 60 months of service is entitled to a retirement allowance which pays the actuarial equivalent of twice the member's accumulated contributions for life.

Early Retirement Benefits

A member who elects early retirement is entitled to a monthly benefit reduced for each month by which the early retirement date precedes the first date on which the member would qualify for an unreduced benefit. If a member has 20 or more years of service credit (15 of which are current), an unreduced benefit is payable.

Disability Benefits

A member with 60 months of service, 12 of which must be current service, is entitled to a retirement allowance computed in the same manner as the normal retirement benefit with service and final compensation determined as of the disability date. Service credit shall be added on to total service for the period from the last day of paid employment to the 55th birthday up to a maximum of service credited to the last day of paid employment. Except for members with 20 or more years of service on the last day of paid employment, the maximum combined service credit (total service and added service) shall not exceed 20 years. For members with 20 or more years of service credit, actual service will be used. The retirement benefit shall not be less than 25% of the member's final monthly rate of pay for those disabled in the line of duty. Ten percent of final monthly rate of pay for each dependent child is also payable if disability occurs in line of duty. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay. A partial disability benefit may be payable if the disability is not total and permanent. The disability will be reduced to a rate determined by the Board.

Death Benefits

If a member dies prior to retirement, but after 60 months of service, 12 of which are current and who is a contributing member, or after 12 years of service, one of which is current and who is not a contributing member, a benefit will be payable to the beneficiary based on the member's age, years of service and final compensation at the date of death. The benefit will be equal to the amount payable had the employee retired and elected a joint and 100% survivorship payment form.

If a member dies in the line of duty and has a spouse as beneficiary, a \$5,000 lump sum payment will be made and a benefit of 25% of the member's final monthly rate of pay will be payable until death or remarriage. If the member dies in the line of duty and has a dependent as beneficiary, a lump sum payment of \$10,000 will be made. Monthly payments shall be made for each dependent child equal to 10% of the member's final monthly rate of pay, but not greater than 40% of the member's final

monthly rate of pay. The beneficiary of a member with 5 or more years of service, one of which is current, may elect a death benefit computed in the same manner as a non-hazardous employee under KERS and CERS, using 2.50% rather than the non-hazardous benefit rate.

Upon the death of a retired member, who had a minimum of 48 months of service credit, a death benefit of \$5,000 is payable.

Optional Forms of Payment

Joint and survivor annuities which provide a reduced benefit for the life of the member, with the benefit at the same or at a further reduced rate continuing after the member's death until the death of the designated beneficiary may be elected by the member prior to retirement. Other optional forms include an annuity with 10, 15 or 20 years of payments guaranteed and a Social Security adjustment with or without survivor rights.

Contributions

Members contribute 8% of gross compensation until age 55. On each June 30, interest is credited at the rate to be determined by the Board on the accumulated contributions the member had in his account on the previous June 30. Upon termination a member may withdraw the contributions with interest, but will be entitled to no benefit payments.

Medical Insurance

Recipients of a retirement benefit may elect to participate in a voluntary hospital/medical group insurance plan for themselves as well as any beneficiaries or dependents. The retirement system will pay a portion of the cost of participation for the retiree and dependents based on years of service credit as follows:

Less than 4 years	0%
4 - 9 years	25%
10 - 14 years	50%
15 - 19 years	75%
20 or more years	100%

If a member is disabled in the line of duty, the retirement system will pay 100% of the cost of the member, spouse and eligible dependents. If a member is killed in the line of duty, the retirement system will pay 100% of the cost of the beneficiary and eligible dependents as long as they remain eligible for a monthly benefit payment.

Increase in Retirement Allowances

Effective August 1, 1996, and on July 1 of each year thereafter, a recipient of a retirement allowance shall have his retirement allowance increased by the percentage increase in the annual average of the consumer price index for all urban consumers for the most recent calendar year as published by the federal Bureau of Labor Statistics, not to exceed five percent (5%). In determining the annual employer contribution rate, only the cost of increases granted as of the most recent valuation date shall be recognized. The benefits of this subsection as provided on August 1, 1996 and thereafter shall not be considered as benefits protected by the inviolable contract provisions of KRS 61.692, 16.652, and 78.852. The General Assembly reserves the right to suspend or reduce the benefits conferred in this subsection if in their judgment the welfare of the Commonwealth so demands.